The Acquisition Process Decision In United Kingdom Companies

by

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Presented to

University of Warwick

England

For the qualification of PhD

for Research Conducted at Warwick Business School, England

February 1997

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ABSTRACT

While there has been extensive research on acquisitions primarily from a finance perspective, little research has specifically addressed the acquisition decision process. This thesis is intended to address this problem by examining three areas: A) How companies search for acquisitions and how they collect information, B) What criteria companies use to examine acquisitions and how these are applied, and C) How does experience and the management resources available influence the process and success.

Data on the acquisition process were collected using 51 interviews with 48 companies within the United Kingdom. Additional data was collected from corporate reports and financial databases. Success was measured using 3 scales based on Datta and Grant (1990).

All companies limited the industries that they searched in looking for potential acquisitions. There was, however, variation in how broad these limits were. Some companies limited the geographic areas that they searched. This was correlated with higher success levels than those companies that operated global searches or did not explicitly limit the area they searched. The source of the idea to consider a specific acquisition was found to be correlated with success, with external ideas performing worse than internal ones. No relationship was found between levels of information collection and success.

As predicted by the finance literature most companies used discounted cash flow analysis as a decision criterion. Few companies, however, used only discounted cash flow analysis. Most also used, payback, accounting rate of return and earnings per share dilution. The use of non finance criteria was also widespread. However, these were not as important as finance criteria.

Discounted cash flow analysis was found not to affect success levels. A number of explanations for this were explored.

Experience of acquisitions by the company and individuals concerned was found not to affect success. Experience of the industry and company by the individual managing the project was, however, found to be positively correlated with success.

No simple relationships between success and management resources available, or the number of consultants used were found. However, a negative relationship between the use of merchant banks as advisers and one success measure used was found.

ACKNOWLEDGEMENTS

I would like to thank the members of BUCCC particularly Marky, Pat, Mat, Bev, Jamie and Ali, members of Warwick University Athletics Club, and Coventry Godiva, notably Colin Jacks without whose company and friendship this thesis would have been abandoned long ago.

To those whom I have shared an office with especially Irena, Tom, Roger and Tom, thanks for your friendship and advice.

I am grateful to my supervisor Professor S.J. Gray for showing that some academics are tolerant and helpful and Duncan Angwin for assorted discussions on acquisitions.

But most of all I would like to thank my Parents, Brother and Grandparents.

DECLARATION

1. This work has been composed by me.

2. This work has not been accepted for any previous degree.

3. The work of which this is a record is done by me.

4. All verbatim extracts have been distinguished and the sources of information have been specifically acknowledged.

Chapter 1 INTRODUCTION

Acquisitions are a major feature of modern corporate life. They dominate the financial headlines. They attract the attention of regulators, politicians, academics, and trade unions. They are constrained by legislation at national and international levels. They can rapidly transform an organisation and the lives of its employees. Their impact on society and employees are studied. The motives and benefits to shareholders are examined, yet relatively little is known about how these decisions are made and whether this influences success or failure. The aim of this thesis is to develop a better understanding of how companies make acquisitions and what make acquisitions successful.

During the late eighties' acquisition activity in the United Kingdom increased substantially. Over 135 billion pounds was spent on acquisitions between 1985 and the end of 1989. During the early nineties recession, activity has, however, remained significant with approximately 110 billion spent on acquisitions in the 5 years between 1990 and 1994.

The driving factor behind these acquisitions does not seem to be conglomerate mergers which characterised the sixties boom, but companies focusing on core activities [1] The main empirical evidence on acquisition decisions is, however, provided by Kitching (1967[2], 1974), Birley (1974, 1976) and Haspeslagh and Jemison (1991) Many of Haspeslagh and Jemison's (1991) cases, however, are from before 1985

This thesis will attempt to address this problem by examining acquisitions conducted after 1988. Before examining the acquisition decision process in greater depth this chapter will address three issues raised above. First, it will outline what this thesis will cover. Second, it will explain why the researcher thinks the acquisition decision needs

researching. In the third part of this chapter the researcher will establish that a framework, to serve as a structure for the rest of this thesis, is required. This will then be developed. The chapter will conclude by using this framework to present a brief summary of some key findings. The researcher will begin by stating the problem to be addressed.

1.1 The Problem

The question this thesis will address is: How do companies make decisions to acquire other companies? It will examine the internal management decision making processes from the idea to the conclusion of the bid.

To reduce this topic to manageable proportions, the researcher chose to limit the fieldwork to the United Kingdom. This was done because the researcher had no funding to cover overseas trips, and thought interviewing outside the United Kingdom would be too time consuming. Given this limitation, the researcher chose not to examine specific issues surrounding cross border take-overs, because no multinational comparison would be possible. The sample frame was therefore limited to, acquisitions where the analysis work and decision making, mainly took place within the United Kingdom.

Second, the researcher thought it would be difficult to collect information on the negotiation phase. He therefore chose to exclude specific hypotheses on it. Thus this research will study the acquisition process from idea to final agreement of a deal, but not the negotiation tactics. The writer will now explain why this process needed studying.

1.2 Why?

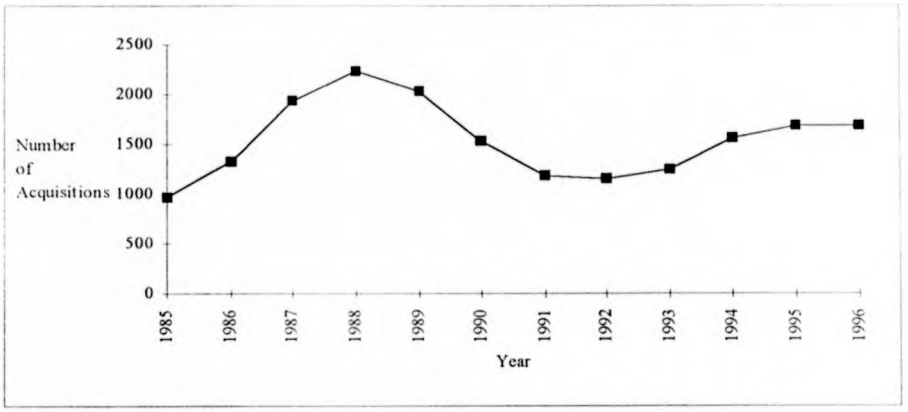
There were 3 reasons for examining the management process before an acquisition decision first, the scale of acquisition activity; second, research suggests that many acquisitions fail, third, there is little research on the decision processes within an acquiring company.

1.2.1 Scale of Acquisition Activity

During the mid-eighties the scale of acquisition activity increased markedly. As figure 1.1 shows, during the last 10 years there have been over 16,000 acquisitions in the United Kingdom. Activity peaked at about 2000 deals per year in the late eighties (Acquisitions Monthly 1989, 1987). More significantly perhaps, it shows that the number of acquisition in the United Kingdom remained above the 1000 deals level during the early nineties, a period of recession. Activity has since increased it though has not regained its late eighties peak. In comparison activity in the early seventies boom peaked at around 1200 deals in both 1972 and 1973, falling to below 300 deals per annum in 1975 and 1976. (Figure 1.2)(Gray and McDermott 1989:8) It should be noted though that, the data in figures 1.2 and 1.1 do not match for the period which they overlap. The researcher is unclear why, both sets of data, however, are valid indications of trends and the high level of activity in the United Kingdom.

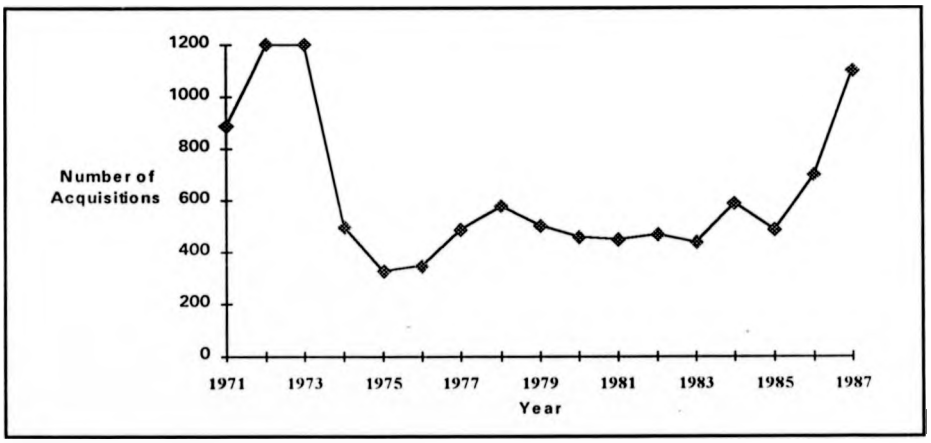
The volume of resources involved also is large, as figure 1.3 shows; with a peak in 1989 of 45 billion pounds and activity remaining above 15 billion[3] pounds per year spent between 1991 and 1993, and peaking at 70 billion in 1995. This compares to

Figure 1.1 Total Number of Acquisitions in The United Kingdom 1988 to 1995



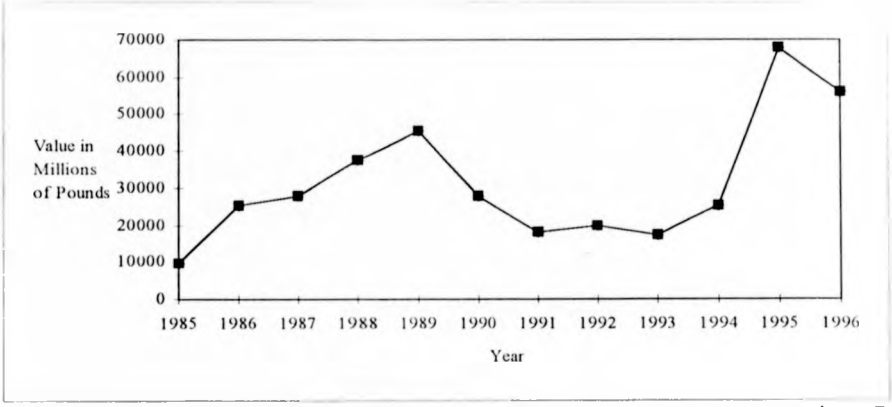
Source Acquisitions Monthly Annual Review 1997,1995,1994, 1990, 1988, and 1987
Note - These data were not collected before 1985.

Figure 1.2 Number of Acquisitions in The United Kingdom 1971 to 1987



Source Gray and McDermott 1989:8
Note - These data do not match the data collected by Acquisitions Monthly. Precisely why is unclear .

Figure 1.3 **Total Value of Acquisitions in The United Kingdom 1985 to 1994**



Source Acquisitions Monthly Annual Review 1997,1995,1994, 1990, 1989,and 1987
Note - These data were not collected before 1985

That is the late eighties, a period of boom for merger activity, has gave way to a lower level of activity in the nineties, followed by a boom in the mid-nineties Acquisition activity has, however, remained consistently above the 1000 transactions a year level Comparison with the previous boom in the seventies is difficult because of inflation and the differences in collection of statistics. Expenditure in that boom peaked at 2.53 billion pounds in 1973 (Gray and McDermott 1989:9)

Acquisitions are thus important because of their number and the volume of resources involved They seem to have become a permanent part of British corporate life, as, unlike previous merger booms, the number of transactions does not seem to have dropped to the same degree [1] Examining acquisitions therefore seemed worthwhile, because of the scale of the resources committed to them by managers, and their continued use as a method of corporate growth

This researcher's second reason for examining acquisitions was their poor performance.

1.3 Performance Record of Acquisitions

The returns from acquisitions to the purchasing company have been at best modest. Porter (1987) found that 60 per cent of the 2021 acquisitions made between 1950 and 1980 by 33 large American companies into new areas had been divested by 1985. The problem with this measure of success is that it fails to distinguish between a profitable sell out for a large gain from a sell-out for a loss.

Kitching (1973) found 50 per cent of the 400 acquisitions in his sample were, according to the executives, failures or not worth doing. Hunt et al (1987) found that managers assessed 36 out of 80 acquisitions he examined as not being successful. Excluding the above work (Porter 1987, Kitching 1972, 1973, 1974 and Hunt et al. 1987) research has predominantly been within a finance methodology focusing on whether acquisitions increase or decrease shareholder wealth. This literature has found that returns to acquiring shareholders are at best small but that the selling shareholders tend to gain. The evidence is, however, not clear cut and is worth briefly examining.

1.4 Shareholder Gains in Acquisitions

Over the last 15 years there has been extensive research on shareholder returns in acquisitions, using event study methodologies. An event study methodology compares equity returns to a normal benchmark, over periods around the acquisition announcement. Differences from the benchmark are attributed to the event. The market is assumed to be efficient and therefore all information available is incorporated into the price.[5]

Jensen and Ruback's (1983) review of research, concluded that, in total, corporate take-overs generate gains. This result is supported by Mandelker (1974), Asquith (1983), Bradley, Desai and Kim (1988), Franks and Harris (1989) and Franks, Harris and Titman (1991).

Who gains is less clear-cut. Jensen and Ruback (1983) found that in studies they examined, target firm shareholders' gained a weighted average abnormal return of 29 per cent over the 60 days around the announcement date, this compares to 3.81 per cent for bidding firm shareholder's. In contrast, Magenheim and Mueller (1988) concluded that acquiring firm shareholders were not better off after an acquisition. These studies, however, are based on American data. This research though, uses a British sample frame. It thus seems more relevant to examine studies based on British data.

Franks and Harris (1989) used a sample of 1814 companies acquired between 1955 and 1985 in the United Kingdom. To reduce benchmark problems they used 3 different benchmarks.[6] Two benchmarks generated significant positive returns to both sets of shareholders.[7] The third benchmark generated negative returns to the bidding firm's shareholders, the difference was attributed to the acquiring companies outperforming the market by almost 1 per cent a month before the bid. The normal return was thus based on a period of abnormal returns. Franks and Harris (1989:249) thus conclude that, 'the post-merger performance of bidders depends on the benchmarks against which bidders are evaluated.'

In the light of this evidence Franks, Harris and Titman (1991) used four different benchmarks to examine the problem of sensitivity to the choice of, and inefficiency of, benchmarks.[8] Franks, Harris and Titman (1991) suggest earlier studies may be suspect because the portfolios they used to generate normal returns, generate abnormal returns

related to size and dividend policy. Franks, Harris and Titman (1991) conclude ' they *(the benchmarks in previous studies)* are likely to generate negative performance for larger than average acquiring firms even if performance is favourable '[9] (Franks, Harris and Titman, 1991 86) They thus attribute bidders negative post-merger share price performance in previous research as probably due to benchmark errors, primarily size effects. This approach appears to correct many of the faults of earlier market based measures It, however, does not solve one problem posed by Franks and Harris (1989:247) that 'bidders may time take-overs to coincide with favourable performance by their own stock ' Post acquisition performance will thus appear to be poor because the normal returns it is being compared to are based on a period of abnormal returns

More recent work by Agrawal, Jaffe and Mandelker (1992) question Franks, Harris and Titman's (1991) conclusions. They show that Franks, Harris and Titman (1991) results only hold for the seventies, a period, which represented half of Franks, Harris and Titman's (1991) data set (January 1975 to December 1984). Agrawal, Jaffe and Mandelker (1992) found a significant wealth loss for the bidders' shareholders during the fifties, sixties and eighties, even-though the method they used was not significantly different to Franks, Harris and Titman's (1991) and both were based on American data. Loderer and Martin (1992) in contrast, show that during the 5 years after an acquisition acquiring firms do not under-perform when compared to a benchmark corrected for size effects, changes in risk free rates and systematic risk.

The finance evidence therefore seems to suggest that gains to the acquiring company shareholders are at best small. That is some studies show acquiring company shareholders' gain, (Allen and Sirmans, 1987, Elgers and Clarke, 1980, Halpern, 1973, Mandelker, 1974), some they lose (Agrawal, Jaffe and Mandelker, 1992), some that the returns are not significantly different from zero (Asquith 1983, Franks, and Titman 1991, Loderer and Martin, 1992, Franks, Broyles and Hecht, 1977), and some that it

changes over time (Bradley et al 1988, Dennis and McConnell, 1986) but that shareholders in the acquired firm gain.

It should be noted that the event study methodology, that these results are based on, has several problems, the key ones being :

a) There can be no other major events specific to a company during the monitoring period [10] This is removes the most active acquirers from the sample. This is a major problem if the post event monitoring period is 5 years, as in some recent studies

b) The event must be of sufficient size to affect the share price to a measurable degree.

c) The assumption that returns from potential acquisitions have not already been discounted into the share price by the market. If this is not the case the total expected return of the acquisition to shareholders will not be captured.

The finance literature has established that acquisitions benefit the shareholder of the target firm. Returns to bidding shareholders are less clear cut with evidence for abnormal positive, negative and zero returns. Coupling this with disagreements over methodology, it seems reasonable to say acquisitions have not performed particularly well for the bidding companies. Other methodologies have, however, concluded that acquisitions performed badly (Kitching, 1972, 1973, 1974, Porter 1987, Hunt 1990)

The capital market perspective on acquisitions has also examined several other issues. This represents a major part of the academic work that has been done on acquisitions. It, however, focuses on variables which can be measured using publicly available data. This literature will be addressed separately in chapter 2, which will position this research relative to this work.

The researcher has outlined two of his three reasons for examining the acquisition decision process, the number and value of deals, and poor results. The third reason for

examining the acquisition decision process, the lack of academic literature on the topic will be demonstrated in sections 1.5 and 1.6. These will outline why a framework was required for this research and develop one. They will conclude with the structure this thesis will follow.

1.5 Need for a Framework

The researcher proposes that a framework based on the acquisition process literature is required to structure the wider decision material. A framework will then be developed using the literature directly on the acquisition process. This will allow the acquisition, decision process, strategic management and financial evaluation literature to be divided into themes and explored in the context of the acquisition environment in later chapters. This review will also demonstrate the limited nature of the academic material directly on the acquisition process.

The researcher will now establish that the decision process, strategic management and financial evaluation literature overlap without covering exactly the same issues. They employ markedly different methodological perspectives from the psychological experiment, to the long term ethnographic study of a series of one company's decisions. The various subject areas have tended to ignore other tradition's work. In consequence the various traditions do not cover the whole process, focus on different elements, and utilise different terminology.

The researcher contends that the decision literature consists of many parallel strands with limited connections and that, there is a need for a framework to structure this work, to allow meaningfully comparisons and generate hypotheses on the acquisition process. The diversity of literature can be illustrated by two quotations from Edward's (1967B 65).

A) 'Wasserman and Silander (1958) have prepared an annotated bibliography of the decision making literature which is extraordinary for omitting most of the literature on risky decisions in both psychology and economics....'

B) 'Chernoff and Moses (1959) have published an elementary text on statistical decision theory, thus making accessible ... the ideas which Blackwell and Girschick (1954) so elegantly and unintelligibly present to mathematicians only.'

That is, it is possible for several books to exist which look at decision making, but be so rooted in different perspectives as to be unintelligible to each other.

This diversity of material is further illustrated by Allison's (1971) use of three different models; the rational, the organisational process and the bureaucratic politics model to explain the decision processes in the Cuban Missile Crisis. Each model offering different insights while ignoring other elements. In the period since Allison's (1971) work further strands of literature relevant to the acquisition process have developed including:

The Bradford group's (Hickson et al 1986) work on strategic decisions.

Pettigrew and other management authors who have suggested that decisions should be examined in the context of a long stream of actions of a firm. (Pettigrew, 1988, 1989, 1990b)

Tversky and Kahneman (Bell, Raiffa and Tversky, 1988, Kahneman and Tversky, 1979, Tversky, 1967, and Tversky and Kahneman, 1974, 1991) have experimentally examined rational choice models and how these fail to mirror human behaviour.

The finance literature has evolved with the adoption of discounted cash flow techniques and the capital asset pricing model as mainstream tools (Mao, 1976: 3-17, Pike 1983)

These models are conflicting yet only partly overlap Each literature provides fragmentary glimpses of the issues without giving a broad illumination of the process. The decision making literature can be viewed as a continuum moving from pure mathematics to pure description, from probability theory to history There are no problems with decision theory if you shut out anything that is not from your perspective, 'One response is merely to damn the behaviour 'If your procedures or decision or feelings are intransitive or otherwise discordant with subjective expected utility, they are incoherent 'irrational' or whatever you want to call it, and trying to justify them as coherent or find other rationalities is a waste of time" (Beach and Lipshitz 1993:22 including quotation of Pratt 1986:486).

The state of the literature in the late seventies is summarised by Ness (1978:73) as, 'With one exception (Mintzberg, 1973) all the paradigms of strategic decision making share one characteristic: All adopt one unique viewpoint, that is, either an economic one (e.g. Raiffa, 1968), a cybernetic one (e.g. Cyert and March, 1963), a sociological one (e.g. Pettigrew, 1973 or Lindblom and Braybrooke, 1970), psychological one (Keen, 1973) a political one (e.g. Allison, 1971), an administrative one (e.g. Bowers, 1970:6) or even an argumentative one (e.g. Reike and Sellars).' That is, there is a variety of conflicting literature on decision making, which concentrates on different variables, methods, perspectives and languages (mathematics or description). Thus the researcher concluded that to generate hypotheses he needed a framework to organise, and allow some comparison of the literature. To achieve this, the researcher proposes to examine the limited acquisition decision literature, to develop a model of the

acquisition process. This will then be used in chapters 3, 4 and 5 to allow the literatures that can be applied to the acquisition situation to be used coherently.

1.6 The Acquisition Process Framework

To develop a framework the researcher will now present a brief review of the literature on the acquisition process. This review is not intended to be complete but to be sufficient to develop a framework to divide the process into meaningful sections. It will also serve to illustrate my third reason for examining the acquisition process, the limited nature of the literature directly on the topic.

As stated in the introduction, this research will not cover the negotiation phase of an acquisition because of the potential difficulty of obtaining data on the negotiation process, and the need to limit this research. The research will also not focus on the issues that have dominated the economics and finance literature, the motivations behind acquisitions and the effects of externally measurable variables. How the latter will be treated in this research will be detailed in chapter 2. They therefore will not feature in this section.

As stated earlier, the literature on the decision process in acquisitions is limited, with empirical evidence being provided by Kitching (1967, 1974), Birley (1974, 1976), Hunt(1990) and Haspeslagh and Jemison (1991). Duhaime and Schwenk (1985) provide a series of conjectures about cognitive simplification in acquisition decision making but do not offer a model of the acquisition process. Hunt (1990) examines 7 hypotheses: 3 concern the related hypothesis, 1 relative size, 1 the motivation to acquire, 1 integration and 1 the sources of the idea. Only the latter is directly relevant to the decision making process. This material will be integrated into chapter 3 where specific hypotheses on acquisition searches are developed. This work, however, does not represent a basis to develop a model of the process.

The only major piece of research conducted recently in this area has been Haspeslagh, and Jemison's, Managing Acquisitions (1991). This research was based on case study research in 20 firms over 8 years. The aims of this research, are summed up by, 'Our primary message is that key differences between acquisition success and failure lie in understanding and better managing the processes by which acquisition decisions are made and by which they are integrated.' (Haspeslagh and Jemison, 1991:3)

Haspeslagh and Jemison view the key problems with acquisitions as, the need, or perceived need, for urgency and secrecy. This results in many acquisitions being examined less rigorously than other capital projects, and that integration issues are not considered until after purchase. From this they propose four common challenges in managing acquisitions -

'- Ensuring that acquisitions support the firm's overall corporate renewal strategy.

- Developing a pre-acquisition decision-making process that will allow consideration of the 'right' acquisitions and that will develop for any particular acquisition a meaningful justification, given limited information and the need for speed and secrecy.

-Managing the post-acquisition integration process to create the value hoped for when the acquisition was conceived.

-Fostering both acquisition-specific and broader organisational learning from the exposure to the acquisition.' (Haspeslagh and Jemison, 1991:12)

They see these problems as a product of what they view as the conventional acquisition model (Figure 1.4) To counteract these problems and challenges they propose a process view of acquisitions as in figure 1.5.

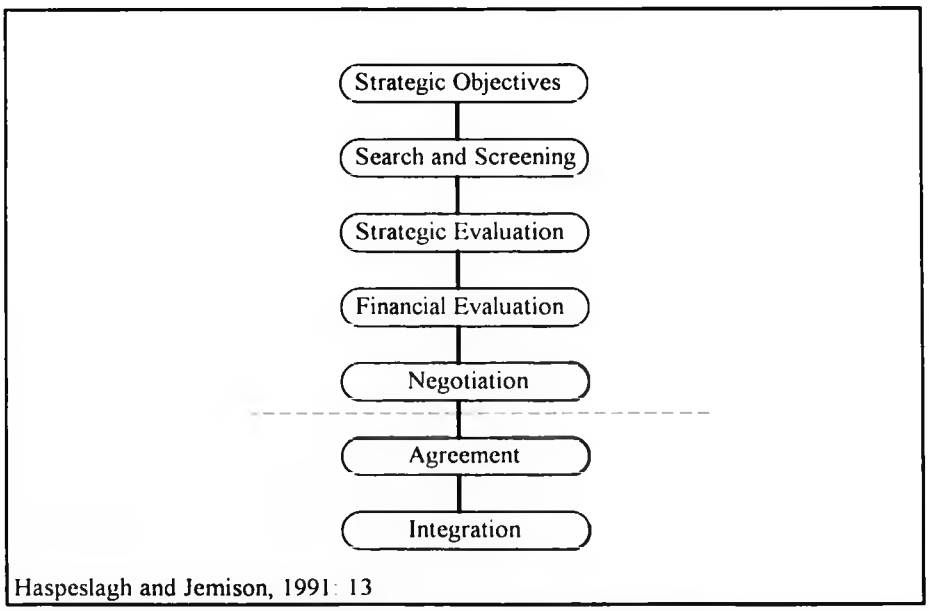
The key differences between Haspeslagh and Jemison's (1991) process model and conventional model of the acquisitions process are:

A)'In contrast, the process perspective emphasises the role that acquisition decision making plays in helping a management team understand how value will be created, not just how to assign a financial value to a firm' (Haspeslagh and Jemison 1991:13).

B) It is less segmented.

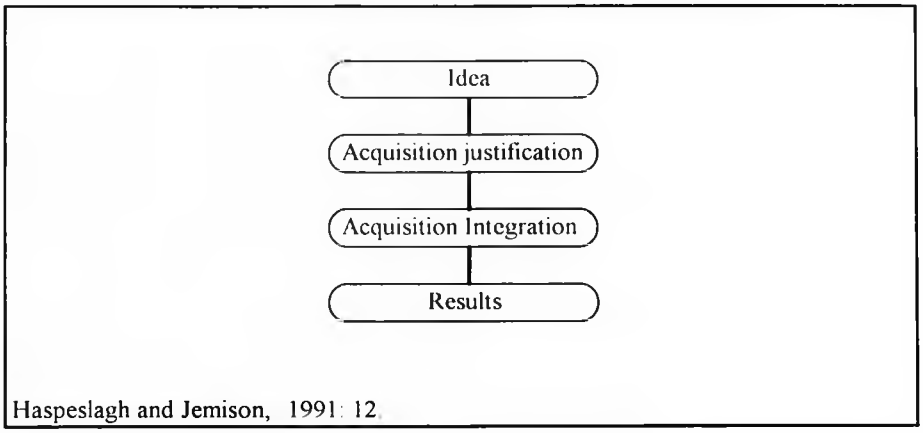
A problem with Haspeslagh and Jemison's (1991) process view, as a tool to subdivide the literature is that, it places most of the processes this research intends to examine into one category, acquisition justification. The process view is also a model which Haspeslagh and Jemison (1991) think, ought to solve some of the problems they see in the acquisition process, rather than reflect current reality. The need at this stage of the research is for a framework to divide the predictions of the decision literatures on the actual acquisition process rather than prescribe what is desirable.

Figure 1.4 **Haspeslagh and Jemison's Conventional View of Acquisitions**



Haspeslagh and Jemison, 1991: 13

Figure 1.5 Haspeslagh And Jemison's Process View of Acquisitions



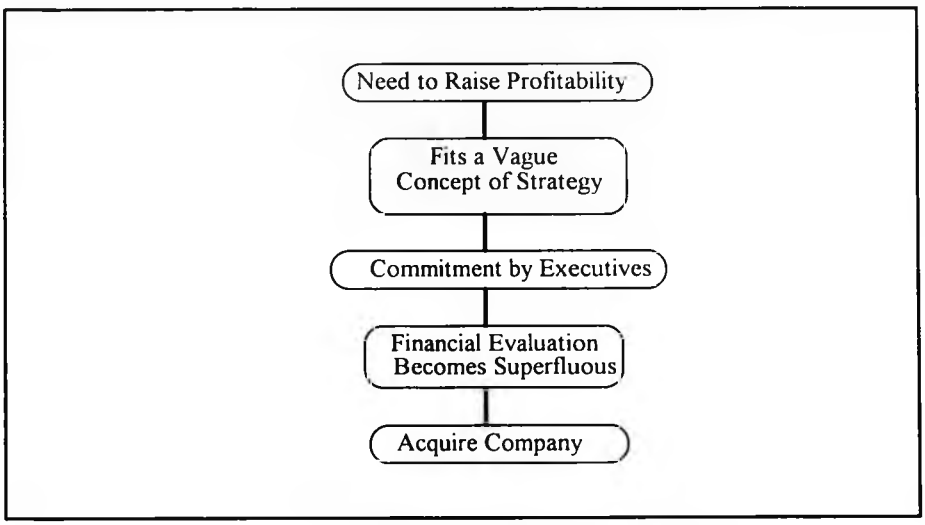
Haspeslagh and Jemison, 1991: 12.

Birley (1974, 1976) focused on examining what was actually going on, during the acquisition process at companies in the sixties rather than providing a model of what should happen. Birley (1976) found that half of the companies she interviewed had a low level of planning when financial controls were excluded. Since this is the frame from which an acquisition strategy would emerge it suggests the merger boom of the late sixties was based on the availability of candidates and fashion rather than any plans. Though executives had a general notion of a strategy they could not be pinned down on it. She found a general lack of agreement over what had triggered acquisitions. The key factor claimed to be behind acquisitions was the need for profitability. Few however, could quantify this. The review of strengths and weaknesses of the company and acquisition candidates tended to be post rationalisations rather than part of the pre-acquisition process.

Jemison and Sitkin (1986a) support Birley's view that acquisitions develop a momentum of their own. Birley states (1976:71), 'having taken the initial step,

executives appeared too emotionally involved to consider not acquiring, analysis thus became superfluous.' This seems to imply the model illustrated in figure 1.6. Birley (1976: 71-72) concludes, 'It would appear that until pre-acquisition analysis and discussion within the boardroom of the acquiring firm improves, all proposed acquisitions whatever their nature will be equally risky.'

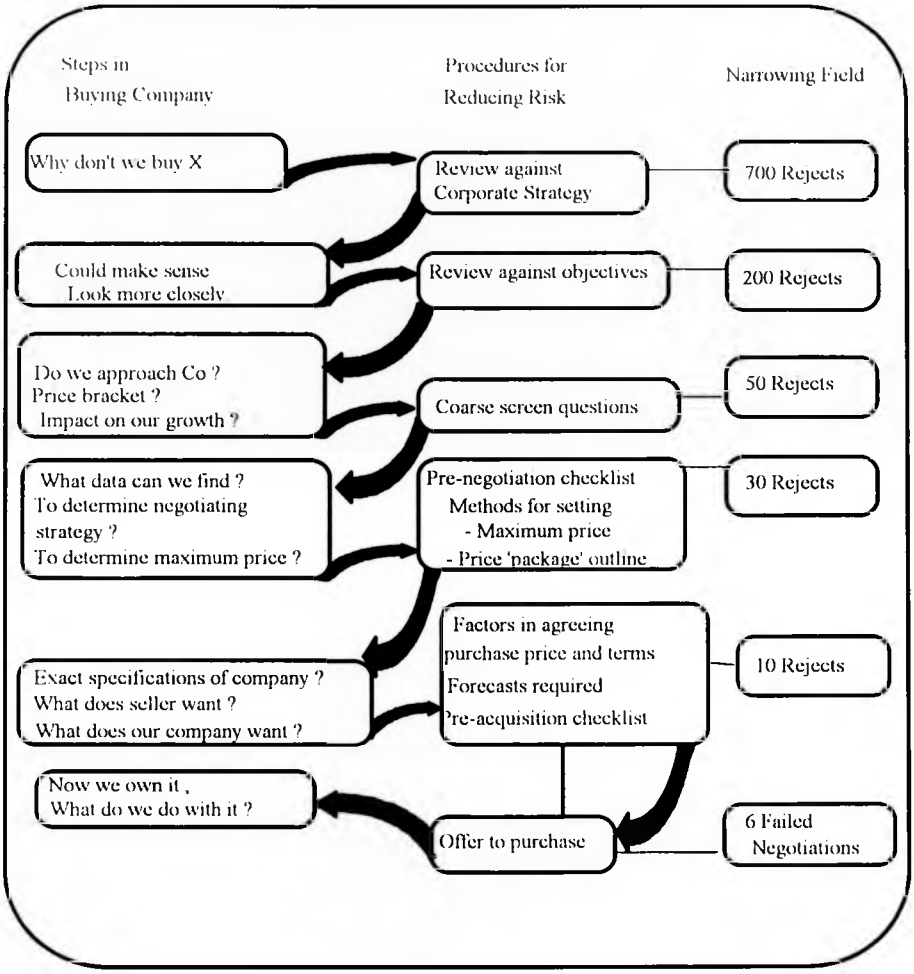
Figure 1.6 Model of Acquisition Process Based on Birley's Work



Kitching (1973 154) presents a model of the acquisition process, shown in figure 1.7. The Kitching (1973) model has two failings as a framework to allow division of the literature, first, it is too complex for the purpose for which it is to be used, second, like Haspeslagh and Jemison's(1991) process view it is not intended to reflect reality.

The two models presented as reflecting reality, the model based on Birley's work (1976) and Haspeslagh and Jemison's (1991) conventional view which presents the process as 'advocated by some management scholars' (Haspeslagh and Jemison

Figure 1.7 **Developing Systematic Procedures for Risk Reduction in Acquisitions**



Kitching, 1973:154, Chart VIII-J

1991:12) offer two contrasting views of the process Birley's (1976) data implies that acquisitions take place in a haphazard fashion, decisions being based on 'seat of the pants' management. Haspeslagh and Jemison's (1991) conventional model implies that acquisitions result from a rigorous classical strategic management approach The model based on Birley's (1976) work seems to be difficult to use as a structure as it hypothesises that the process has little structure

Haspeslagh and Jemison's (1991) conventional view therefore seems an appropriate starting point to develop a model of the acquisition decision process. To this a number of changes were made.

First, the negotiation phase was excluded. This was primarily because of difficulties in gaining access to what is a highly sensitive phase within an already sensitive process. This research, however, already covers a wide range of issues and has resource and time constraints. Additional scope, therefore, would have had to have been at the expense of depth or sample size. This leaves 3 phases; search and screening, strategic evaluation, and financial evaluation.

Second, Haspeslagh and Jemison (1991) fail to specify what is in their conventional view 'Search and screening box'. They see the key problems as (Haspeslagh and Jemison 1991: 58):

A) 'Fragmented perspectives, of many specialists during analysis and decision making.'

B) 'Increasing momentum, to consummate the transaction.'

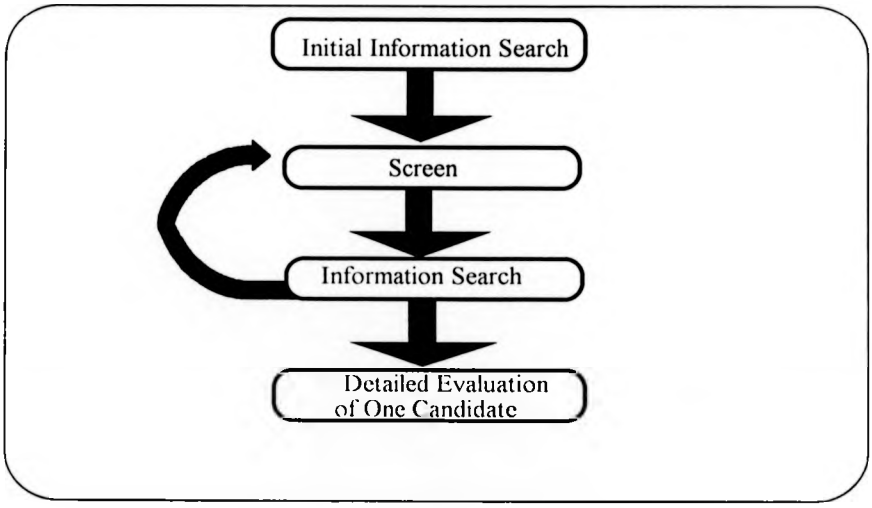
C) 'Ambiguous expectations, about key aspects of the acquisitions between both sides in the negotiation.'

D) 'Multiple motives among acquiring managers.'

This perspective, however, does not provide a subdivision of the 'search and screening box'.

The prescriptive authors see the search and screening processes as a series of filters This can be seen in Figure 1 7, (Taken from Kitching, 1973:154), where of 700 potential targets, 6 reach the negotiation stage. Jones (1982: X) divides his chapter on 'searching for potential acquisitions' into 'identifying acquisition prospects', and 'the selection of acquisition prospects', the latter including: 'Initial screening', 'secondary screening', 'Information needs for deeper evaluation', 'using an information check-list' and, 'the acquisition case study ' Jones' (1982) approach seems to imply the model outlined in figure 1.8

Figure 1.8 **Information Collection and Screening**



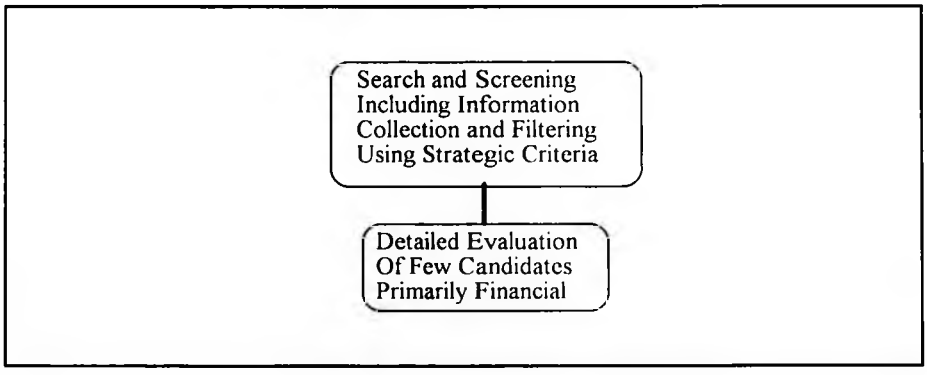
Based on Jones, 1982

That is, the initial search and screening phase is followed by progressively more detailed searches and screening until a detailed evaluation of one candidate occurs

Given the above, the search and screening phase will be specified to include an examination of the filter proposed in the prescriptive literature. This will inevitably incorporate much of the strategic analysis. The search phase will also be taken in the wider sense to include all searching and information collection.

Third, the financial evaluation and the strategic evaluation not included in the first 'box' will be treated as one linked process, as in Haspeslagh and Jemison's (1991) process view. This results in a base model, figure 1.9. This model (figure 1.9) focuses on the process and does not incorporate the environment in which an acquisition takes place. This will be considered next.

Figure 1.9 **Adapted Model of Acquisition Process**



1.7 Organisational Context

Examining all elements of an organisation to see if it influences the acquisition process is beyond the scope of this research. The researcher, therefore, needed to explore the literature to decide on which issues to focus. An issue that has received attention in the limited literature that exists is experience. Even here the results are, however, varied. (Kitching, 1972, 1973, 1974, Lubatkin 1983, Kusewitt, 1985, Lubatkin and Shrieves 1986, Haspeslagh and Jemison 1991)

Haspeslagh and Jemison (1991) found that given time constraints and high levels of secrecy, responsibility for acquisitions inevitably centred on a few people. The experience of these managers thus became important. (Haspeslagh and Jemison 1991: 53) 'Moreover, our research found that whatever the extent of experience at the broad corporate level, crucial aspects of the decision-making process devolve on individuals like Wirtz and Wilcke (two managers involved in their case studies) who, like most managers, are not familiar with the intricacies of acquisition decision making, negotiation and analysis. Thus because of the sporadic nature of the process, managers must often make acquisition decisions with less and less insight into the possible results of those decisions than they expect when making routine resource allocation decisions.' This seems to imply that work will be carried out by a few managers. The experience of these managers is therefore important to the process. They conclude that, (Haspeslagh and Jemison 1991: 53) 'mechanisms are needed to bring group wide experience to the setting of acquisitions without taking responsibility for the acquisition away from line management.'

This contrasts with Lubatkin (1983:223), who considers corporate experience to be important, 'Acquiring firms that pursue a strategy of higher activity in the external acquisitions market may outperform acquiring firms that follow less active strategies.'

Business International in an update of Kitching's (1973) work found, (Business International, 1992 VI) 'Our latest research confirms that more experienced acquirers - not surprisingly-report a high success rate.'

Kusewitt (1985 162) supports both views stating 'Less frequent acquisition (less than 1 every 4 or 5 years) would probably result in excessive loss of corporate memory and experienced acquisition staff.' That is, firms and individuals who have greater experience of acquisitions and the problems they pose should perform better. His results do not support this. He found a strongly negative linear relationship between acquisition rate and return on assets and market return. That is, the more acquisitions completed per year the lower the success rate. This result was based on a range of acquisition rates of between .3 to 15.3 per year. Acquisition rate, however, includes two elements, experience level and a time available element. A high acquisition rate may limit the time available to conduct the acquisition process. If the number of people available to work on a project is restricted, because of the secrecy surrounding most acquisitions, this will limit the management resources available. Considering this, Kusewitt (1985) posited that two opposing factors were affecting success: experience, which would increase with acquisition rate, and lack of management resources which would lower success levels at higher acquisition rates. However, he could not establish a peaked relationship between success and acquisition rate.

This view that management resources are important in acquisition success is supported by Kitching (1972). He found that the presence of managers of change (1972 44) and the availability of sufficient management resources were factors in success(1972 54), 'The sum of management skills must be greater than the joint management task.' He acknowledges the problems of lack of time and states that in the early stages of appraisal 'the greater danger at this stage is to consume too much expensive time '(1973 112) This seems to imply that a high rate of acquisition would

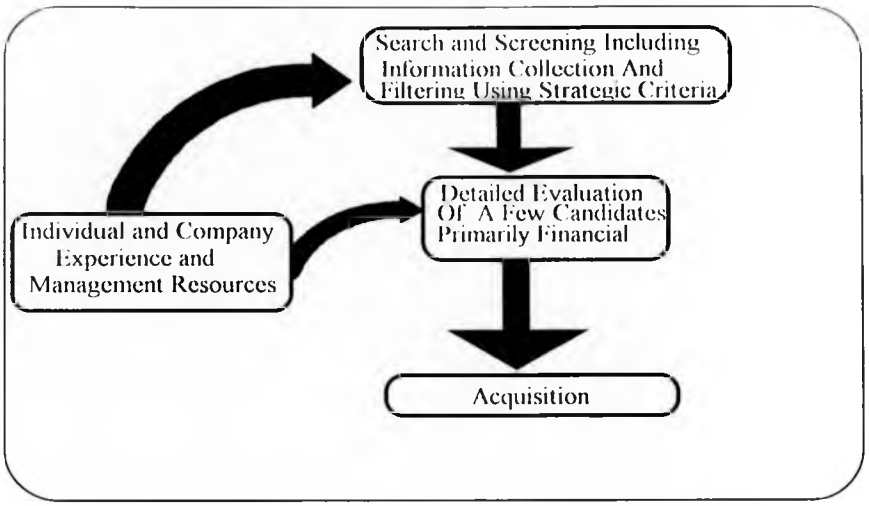
reduce success as acquisition management resources become stretched. This factor swamps the lack of experience in companies except at very low acquisition rates. The lower success levels of companies with high acquisition rates may be exacerbated by the large number of potential acquisitions being reviewed. In Kitching's sample (1973), for every completed acquisition an average of 100 was screened and the total average time cost per completed acquisition was 3000 hours (1.5 man years work).

The issues of experience and resources available therefore seem to deserve further investigation, particularly as most equity market based studies have had to exclude companies which make multiple acquisitions for methodological reasons. Individual and company experience thus seem valid areas to explore within the wider literature. Thus this researcher proposes to examine management resources, and the acquisition experience of both individuals and the company. Therefore, this researcher proposes to use the model below as a basis to review the literature. (Figure 1.10)

The literature review for this thesis will therefore be broken down into three basic areas:

- Information collection and search behaviour (that is looking for a potential acquisition target) including initial screening using strategic criteria,
- Evaluation phase focusing on the financial elements.
- Two major influences on the process, material which focuses on, and the experience and expertise of, the decision makers and companies, and the management resources available.

Figure 1.10 **Framework to Allow Literature to be Examined**



The empirical chapters will mirror this structure expect that, the evaluation phase will be split into 2. The first chapter (chapter 8) will describe which decision criteria companies are using and how they are applied. The second chapter (chapter 9) will examine whether the use of specific criteria and their application influences success.

This framework, however, ignores several external factors which have been explored by the finance literature, including form of consideration, nature of bid, relatedness, relative size. However, to fully incorporate these variables with a finance methodology would exclude examination of many of the internal variables on which this work intends to focus. To ignore the research from a capital market perspective, however, would miss the opportunity to use the insights it might provide on internal behaviour and, the ability to standardise for some external variables. This thesis will therefore review this research in chapter 2, separately from the main literature review chapters which will focus on the internal acquisition process.

The development of the framework (shown in figure 1.10) in the last three sections has also illustrated the lack of material on the acquisition process, the researcher's third reason for looking at the acquisition process. There is, however, extensive material on external variables as the next chapter will show. The researcher will now present a brief outline of the content of each chapter.

1.8 Thesis Structure

Given the above framework and the need to place it in context of the financial paradigm on acquisitions, this thesis will follow the structure below. With each chapter, a brief summary of the main points the chapter covers is given.

Chapter 2 - Review of Finance Perspective on Acquisitions.

This chapter explores the factors that the finance perspective, the dominant perspective on acquisitions, has examined. These factors, however, are viewed as not examining what is going on inside companies. This literature is therefore insufficient as a basis for this thesis. However, it offers some insight into internal variables. Chapter 2 thus proposes several variables to incorporate into this research and a number to standardise for.

Chapter 3 - Development of hypotheses on information collection and search behaviour.

Chapter 3 concludes that, although the classical view expects companies to review all potential acquisition targets, more recent models of decision making stemming from Simon's (1958) bounded rationality model would predict companies limiting their search areas. It thus hypothesises that, by using limits to its acquisition search area, a company will reduce its acquisition success.

From the classical decision model it also develops the hypothesis that the use of larger numbers of information sources increases success levels in acquisitions. The decision literature, however, does not consider the sources of any potential solution. The prescriptive literature is thus examined to produce the hypothesis that acquisitions resulting from ideas generated by the seller or third parties will perform worse than acquisitions resulting from internal ideas.

Chapter 4 - Development of hypotheses on decision criteria and application.

This chapter concludes that although, the finance literature proposes the use of discounted cash flow methods as decision criteria in investment decisions, empirical research suggests they are not universally used. It therefore hypotheses that the use of discounted cash flow techniques increases success levels and the use of other methods reduces success levels in acquisitions. It goes on to examine the application of these methods. In particular, contrasting the use of fixed hurdle rates, which the empirical literature has found to be used in practice, to the finance literature's prescriptions that for large investment decisions interest rates should be specifically developed to take account of that project's risk. The application of fixed hurdle rates is therefore hypothesised as reducing success rates.

Chapter 5 - Development of hypotheses on management resources and management experience.

Chapter 5 examines how the literature predicts that experience affects decision making. It presents a variety of conflicting evidence, and proposes the hypotheses that, decision maker and company experience increases acquisition success levels. It also examines how the level of management resources, including consultants, available might affect success and the process.

Chapter 6 - Development of methodology.

This explores the potential methods available to examine the hypotheses developed in chapters 3 to 5. It concludes that the best data collection method for this research is interviews, and that a qualitative success measure is the only type which would allow analysis of success, without biasing the sample frame to companies which do not regularly acquire, or, to large acquisitions. It will also show that those companies interviewed are significantly larger than the sample frame, but that this is the product of two very large companies being interviewed, and that the group interviewed includes a disproportionately large number of petro-chemicals and food companies and a disproportionately small number of financial service companies and utilities.

Chapter 7 - Empirical testing of hypotheses on information collection and search behaviour.

Chapter 7 concludes that the number of information sources used does not appear to affect success levels. It is hypothesised that this is due to variations in the quality of information. However, no adequate measure of this could be developed. The source of an acquisition idea was found to have an influence on success levels. Ideas bought to a company by external parties were found to perform worse than internally generated ideas.

Chapter 8 - Examination of what decision criteria companies were using and how they were applied.

The majority of companies were found to be using discounted cash flow (DCF) criteria (41 companies, 80.4 per cent). However, only 6 companies used only discounted cash flow criteria and not other capital budgeting criteria. Twenty-four companies used payback, 33 change in earnings per share and 22 accounting rate of return. Thirty-two companies said they used fixed hurdle rates. However, they varied in terms of how rigidly these were applied.

Chapter 9 - Empirical testing of hypotheses on decision criteria and their application.

The empirical results presented show that the use of discounted cash flow techniques and earnings per share were significantly correlated with lower performance on one success measure. The use of payback and accounting rate of return were found not to be correlated with the success measures used. A number of explanations of this lower level of performance by companies using discounted cash flow methods (DCF) are proposed and examined

Chapter 10 - Empirical testing of hypotheses on management resources and management experience.

Individual and company experience of acquisitions were found not to influence success levels. Individual experience of the company and industry were found to have a positive correlation with success. The level of management resources and the level of use of consultants in general did not affect success levels

Chapter 11 Conclusions

Chapter 11 reviews this thesis and presents a series of directions for future research

1.9 Summary

This chapter established that this research will focus on the acquisition decision process, from idea to decision, within companies which make acquisition decisions in the United Kingdom. Secondly, it has established that there is a need for research on this area. Finally this chapter has briefly reviewed the literature on the acquisition

process, concluding that a three part structure would be a valid way to subdivide the literature

1) search and information collection,

2) strategic and financial evaluation, and

3) individual and company experience and management resources

The importance of the finance paradigm on acquisitions is accepted, however, and thus it is proposed to examine this literature in the next chapter

Footnotes

[1] Hunt's sample of 40 British acquisitions between 1980 and 1985 produced 3 conglomerate acquisitions. Over half Kitching's (1972) sample of late sixties acquisitions of 181 cases were diversifications.

[2] This article is referred to in the rest of this thesis as being published in 1972. This is a reprint of the original article. The author is unsure whether any changes were made to the 1967 article so the author has referred to the article he has used.

[3] Thousand million.

[4] For a review of the period up to 1987 see Gray and McDermott(1989) and for a brief look at the number of acquisitions and the level of hostile take-overs in the United Kingdom see Jenkinson and Mayer (1994).

[5] See Samuels, Wilkes and Brayshaw, 1990:246-69 for an examination of the efficient market hypothesis.

[6] The three models being :

A) Using the model $C_{jt} = \alpha_j + \beta_j rm_t$

with α and β being established using a sixty month period.

B) Using the same equation as the first method but setting the α and β at zero and one respectively.

C) CAPM where beta is established over a sixty month period and the risk free rate is the yield on a three month treasury bond converted to a one month return.

[7] Benchmarks 2 and 3 generated positive significant returns to both sets of shareholders.

[8] The benchmarks used were the CRSP equally-weighted index, the CRSP value-weighted index, eight portfolio benchmark incorporating 4 portfolios based on size , 3 on dividend yield and 1 on past returns, and a 10 factor benchmark provided by Lehmann and Modest. For more details see Franks, Harris and Titman (1991:86).

[9] Italics added.

[10] No events i.e. no acquisitions or major exceptional events specific to the share in question.

Chapter 2 THE FINANCE PARADIGM AND ACQUISITIONS

2.0 Introduction

This chapter will review the finance literature on acquisitions, and explain how the variables identified were incorporated or standardised

The finance literature has mainly focused on a single variable contingency approach, between success, and capital market characteristics of acquisition transactions Success in this literature is measured in terms of returns to shareholders using an event study methodology. This eliminates the need to access unpublished data. The variables which have received most attention within this paradigm are: the effect of the form of consideration, method of bid, whether the bid is contested, the related hypothesis (that acquisitions by companies into related areas should perform better), and relative size A few authors have examined other variables using a single variable contingency approach. These studies have tended not to use an event study methodology. This may reflect methodological difficulties outlined in the examination of acquisition success levels in chapter 1, rather than the importance of the variables

This chapter will now examine the capital market research relevant to acquisitions Each section of this review will focus on a specific variable and conclude by explaining how it was incorporated into this research. The researcher will begin by examining the form of consideration, and offer

2.1 The Form of Offer and Consideration

Early research on the effect of the method of bid, tender offer or merger, suggested that tender offers performed better than mergers [1] Jensen and Ruback's (1983) review found bidders via tender offers gained significantly, while returns in mergers to bidders were approximately zero Franks and Harris (1989) supported Jensen and Ruback (1983), finding that bidders do better in tender offers

Later work by Agrawal et al (1992) found no unusual performance for tender offers and Loderer and Martin (1992) found that performance over a 5 year period is zero regardless of acquisition form Loderer and Martin (1992), however, did find under-performance in the first 3 years of a merger during the sixties and seventies but this disappears for the eighties. This result is supported by Bradley, Desai and Kim (1988) who suggest that gains to tender bidders have decreased over time

This could explain the results of earlier studies (Jensen and Ruback 1983, Franks and Harris 1989) which tended to cover less than 3 years after the acquisition The periods their data cover (Frank and Harris, 1955-1985, Jensen and Ruback included studies covering the period 1941-1980) mean that proportionally more of their data is from the sixties and seventies. In conclusion, it seems there may have been a difference between mergers and tender offers in the sixties and seventies but this seems to have been eroded If this is correct it may limit the value of studies based on older data for interpreting the present situation

Hansen (1987) proposed that the differences between mergers and tender offers may be due to the greater use of cash in tender offers. The relationship between type of consideration, cash or equity, however, is not clear. It has been posited (Franks, Harris and Titman, 1991, Kusewitt, 1985, Travalos, 1987) that cash bids should perform

better as they provide positive information about the bidder's cash reserves and its ability to generate funds from banks. The latter factor is taken to imply that the banks, usually with greater information than is publicly available, think the company is sound. Kusewitt's (1985) research did not support this hypothesis. He found a negative relationship between cash offers, and return on assets and his market return measure.[2] This is supported by Agrawal et al.(1992) who, using an event study method, found that in the long run cash tender offers performed worse than equity tender offers. In contrast Travalos (1987) found cash offers were associated with normal returns and equity offers where found to have negative abnormal returns. This was independent of the type of take-over. Franks, Harris and Titman (1991) similarly found equity offers performed worse than cash offers, though this, however, was not statistically significant.

Thus the effects of acquisition type (merger or tender offer) and type of consideration (cash or equity) are unclear with evidence for and against relationships existing. The date of the research may prove to be an important factor in the results generated. The benefits of tender bids may have been eroded, as the advantages have become more widely known and accounting rules have changed.

The author's research did not attempt to standardise for cash or equity deals. Many transactions involve a mixture of cash and equity, some escrows, bonds and other differed payment vehicles. Cash is sometimes raised immediately before a transaction or through trombone rights issues around the transaction, few deals involve only equity. The use of cash may be influenced by relative size with cash payments being more prevalent in smaller acquisitions. Establishing the method of payment in smaller private transactions, may be impossible, particularly where the main consideration in choice of the payment method is to minimise the tax liability of the seller.

The issue of a transaction being a merger or acquisition was not considered as all deals in the sample frame were acquisitions.

The bidding process has also been cited as a major factor in the returns to the 2 groups of shareholders. That is, are multiple bidders involved, is it a hostile bid or friendly. This hypothesis is based on the assumptions that, the bidders will pay the minimum possible to acquire a target up to a pre-decided maximum and that total gains involved are not affected by the bidding process. The researcher will now examine this.

2.2 Nature of The Bid

Bradley, Desai and Kim (1988) found that in cases where there were multiple bidders, returns to the acquired company were greater, and the returns to the acquiring company were reduced but this was not significant. Unsuccessful bidders in multiple-bidder contests lost 8 per cent of their pre-bid value.

Franks, Harris and Titman (1991) found no significant difference between contested and uncontested bids and opposed compared to unopposed transactions for bidders. But returns to target shareholders were greater. This supports Franks and Harris (1989) who found that gains to bidders are slightly smaller but that this is not statistically significant.

Jensen and Ruback (1983:36) report that, Kummer and Hoffmeister (1978) found if the bid were successful gains to target shareholders were greater when, the offer was opposed by the incumbent management. But if the bid failed, the target company shareholders incurred losses. Jensen and Ruback (1983:37) also report Dodd's evidence (1980) that, opposition by the present management of a target firm, harms their shareholders as it may result in termination of the bid. The research seems to

imply, that gains to the target company shareholders are greater in completed opposed or contested bids. However, if the bid fails the target company's shareholders may incur loses. This does not appear to be a zero sum game with the bidders losing by an amount equal to the target's gains, bidder's returns appear to be unchanged.

There could be an intuitive explanation for this. Managers in a friendly acquisition may agree not to make people redundant in return for the target board's support. This may reduce the value of the target, which is reflected in the price bid. That is, in a friendly bid, value may not be transferred from employees, in the form of loss of employment and job security, to shareholders as a capital gain. This issue could be associated with that of relatedness. Companies in the same industry may not be prepared to cut work forces by as much as outsiders because of personal associations. Equally there may be higher potential gains.

The author's research focused on friendly bids. It did not exclude hostile bids. However, only 2 cases covered by the research were hostile. The researcher expected this because of the greater sensitivity of information in high profile hostile bids. The nature of the bid process may have implications for how the decision process takes place. Unopposed friendly mergers may allow greater access compared to other types of bid. The results of this research may therefore not reflect hostile bid behaviour. The hostility of a bid may be associated with relatedness, conglomerates making more hostile bids. Research on this is discussed below.

2.3 Relatedness

The relatedness issue has received extensive attention, given the 'common sense' nature of the hypothesis that acquisitions of companies operating in a similar area to the bidder ought to perform better than conglomerate acquisitions., because there are greater opportunities for synergy gains The evidence is divided though. Seth (1990a) reporting the results of other papers found that, Chatterjee (1986), Elgers and Clarke (1980) and Wansley et al (1983) found unrelated acquisitions have higher returns Lubatkin (1987), however, found no difference. Shelton (1988) and Singh and Montgomery (1987) found related acquisitions have higher returns, and Choi and Philippatos (1983) found that conglomerate mergers, where there is no increase in debt, do not perform as well as non-conglomerate mergers.

Other papers have produced equally conflicting results. Kusewitt (1985) found that the percentage of assets in the same industry was positively related to accounting return on assets at a 98 per cent significance level and market returns at 94 per cent level. Thus supporting the related hypothesis, as does Kitching's (1972) work using a managerial measure of success Agrawal, Jaffe and Mandelker (1992) found non-conglomerate mergers performed worse than conglomerates although the results were not statistically significant for all event periods they used.

Lubatkin's (1987) work subdivided his sample of acquisitions further into 4 groups, product concentric[3], horizontal and market concentric[4], conglomerate and vertical integration. He found related acquisitions do not create more value for bidding company shareholders. He concludes, 'The results did not show that some product and market relatedness is better than none.' (Lubatkin 1987:50) Hunt (1990) similarly found no statistically significant differences in success levels of different levels of

relatedness. This contrasts with Kitching (1973) who found that concentric acquisitions performed worse than conglomerate, vertical or horizontal acquisitions.

Shelton (1988) examined the issue from a strategic fit perspective. He found that acquisitions where assets were used more intensively created value. More value though was created when expansion into new markets with similar products, but new customers, took place.

The evidence as a whole though, is unclear, with papers supporting the hypotheses that both, related acquisitions have superior performance and that unrelated acquisitions have superior performance.

The level of relatedness has clear implications for the acquisition decision process. Companies buying operations in closely related fields should be able to rely more on internal information, and less on merchant banks and consultants. Such acquisitions may also be conducted at a lower level in the organisation than conglomerate style acquisitions, as the skills exist to conduct financial analysis in operating units. The researcher concentrated on related acquisitions as he did not expect to be able to construct a sample frame of conglomerate bids in the nineties in the United Kingdom. There were 3 reasons for this expectation:

A) There have been fewer diversification acquisitions. Hunt's (1990) sample of 40 acquisitions produced only 3 cases of diversification.

B) The rare conglomerate bids in the United Kingdom during the nineties have involved few purchasing companies.

C) The centralised nature of the acquisition processes at conglomerates will reduce the number of potential interviewees at each conglomerate. Thus restricting the number of cases per company. The researcher therefore concluded there were insufficient potential interviewees to develop a sample frame.

This research thus focused on related acquisitions. It did not exclude unrelated acquisitions but only 2 acquisitions covered in interviews for this research were not related. One was concentric, the other conglomerate. The researcher used Lubatkin's(1983) definition of related acquisitions, where related acquisitions were defined as horizontal and market concentric acquisitions. That is, acquisitions which involved the same product but different markets and the same product and same market were treated as related.

The final variable that has been regularly examined by the capital market literature to see if it affects acquisition performance is relative size.

2.4 Relative Size

The non-finance literature has suggested that exceedingly small and exceedingly large acquisitions should perform worse than other acquisitions. Kitching (1972[5]), using a qualitative methodology, found a 85 per cent failure rate, where size by sales was less than 2 per cent. Hunt (1990) examining this finding found that 67 per cent of acquisitions below Kitching's threshold failed. Kitching's (1973) later work found performance peaked in his 2 categories covering acquisitions between 10 and 50 per cent of the buyer's sales. These categories however contained only 41 acquisitions out of a sample of 395. Fifty-one per cent of the sample was below 1 per cent of the buyer's sales. Kusewitt (1985) (using both return on assets employed and market returns) found relative size to be negatively correlated with return. This is 'not necessarily inconsistent with their findings if their data sets were confined to smaller relative sizes and if a peaked relationship does in fact exist.' (Kusewitt, 1985:159)

Franks and Harris (1989), using an event study methodology, found that returns for the bidder during the event month, and the 6 month period starting 4 months before the event month, were the same for their 3 size groups.[6] This view is supported by Franks, Harris and Titman (1991:93) who examined returns over the 3 year period beginning the month after the final bid. They state, 'the multi-factor benchmark indicates no significant differences in returns based on the relative size of the combining firms.' Agrawal, Jaffe and Mandelker (1992) and Loderer and Martin (1992) split their samples into quintiles by size and found no relation between size and post-merger abnormal returns over the 5 years after an acquisition.

The evidence on size is thus conflicting with different studies generating different results although more recent studies tend to find no difference between size groups. There, however, appears a distinction between the events study based literature (Franks and Harris 1989 Franks, Harris and Titman 1991, Agrawal, Jaffe and Mandelker 1992 and Loderer and Martin 1992) who found no difference in returns to bidding company shareholders by relative size, from those using other methods (Kitching 1972, 1973, 1974, Hunt 1990, and Kusewitt 1985) who found very small acquisitions performed badly. This may be the result of the event studies method being unable to detect effects of small acquisitions, where other methods have found poor performance. Loderer and Martin (1992:71) excluded all acquisitions under 10 per cent of the acquirer's market value. Given the divided evidence on relative size the researcher decided to incorporate relative size as a variable in this research.

The researcher thus proposes the hypothesis that:

2:1) Relatively small acquisitions will perform worse than larger acquisitions.

In addition the researcher will test the hypothesis proposed by Hunt (1990:71) that:

2:2) There is a size mismatch if the seller's turnover is less than 2 per cent of that of the buyer and that failure will be above the norm.

This researcher thought there was no advantage in using asset or market based measures over sales based relative size measures in these hypotheses. The former would have restricted the sample[7] while sales data would be more easily available even if only the occurrence of the acquisition was reported.

The use of divisional rather than total acquirer sales was also considered by the researcher. The advantage of considering only the division involved is that it focuses the attention on the size of the acquisition relative to, the units it will be merged with. It, however, removes the element of size compared to the total company and hence the relative importance of the decision to the company. An acquisition may be the same size as the division it is to be integrated into thus posing problems for integration. It may, however, only have a hundredth of the sales and thus be relatively unimportant for the entire company on this measure. Two problems were also perceived with using divisional data. It would have been more difficult to obtain data and deciding what divisions or units were affected may have been a problem. As the focus of this research is the pre-decision phase, total sales of the acquisition divided by total acquirer sales was used.

The author thought that a possible problem with this variable was that, by asking the exact relative size of the acquisition, he would remove the possibility of the interviewee keeping the case anonymous. To avoid this the researcher chose to collect categorical data. This required a choice of categories.

The number of categories chosen had to balance the need to generate sufficient cases in each category to allow valid statistical analysis and the loss of information in the data. For the chi-squared tests to be valid a minimum of 5 cases must be expected per square.[8] Thus if success was used as a dichotomous variable, this would require ten

cases per size category. A maximum of 4 relative size categories thus seemed prudent as the researcher thought he was unlikely to conduct many more than 50 interviews. The 4 relative size categories chosen were, 0 to 2 per cent, 2 to 5 per cent, 5 to 10 per cent and above 10 per cent of total buyer sales. The reasons for these choices were

A) Kitching's (1972:45, reprint of 1967 article) data found 'size mismatch (where acquired company sales were less than 2 per cent of the parent company sales volume before the merger) occurs in 84 per cent of acquisitions considered failures'. From this evidence it would appear rational to have one division at 2 per cent of acquirer's sales.

B) Kitching's (1973) later work on acquiring in Europe found a marked change in failure rates between the 1 to 5 per cent group and the 5 to 10 per cent group. Thus suggesting divisions of categories at 5 and 10 per cent would be relevant. A figure larger than 10 per cent would start to result in the category becoming irrelevant, for some companies. For example 25 per cent of Nestlé's sales would be 6 billion pounds, or Shell 17.5 billion pounds.

C) It will allow comparison with Hunt's(1990) British results.

Data on relative sales will thus be collected using the categories of; 0 to 2 per cent, 2 to 5 per cent, 5 to 10 per cent and above 10 per cent of total buyer sales. The results on hypotheses 2.1 and 2.2 will be reported in chapter 8. Several other variables have received less widespread attention within the finance literature. The researcher will examine the literature on these next.

2.5 Acquisition Rate and Momentum

Several variables measuring features of acquisitions which can be externally measured have received less widespread attention. This may be due to several methodological difficulties associated with capital market methodologies.[9] This category includes,

acquisition rate, momentum, timing, acquiree profit, price paid, growth of target, and the Williams amendment 1968. [10] The last factor will not be reviewed as it is an American piece of legislation and thus is not relevant to this research as data was only collected in the United Kingdom.

Acquisition rate appeared pertinent to this research as it partly reflects the experience of the organisation, and those individuals who have remained at that company. A company with a high acquisition rate may be expected to have more established procedures and rules of thumb concerning acquisitions. Kusewitt (1985), found a negative relationship between acquisition rate, and success. This was related to acquirer size. Larger firms were able to make more acquisitions, possibly because some acquisitions may have been conducted at divisional or business unit level. The integration process in larger companies may also only affect individual divisions or business units.

Associated with acquisition rate is the issue of momentum. Amburgey and Minner (1992) found that, the number of acquisitions a company had made increases the future probability of making an acquisition. However, they do not examine whether the number of prior acquisitions affects returns. That is, whether experience increases success, not just the future probability of acquiring another company.

The limited research on acquisition rate may be because of methodological problems of using an event study method to examine highly active acquirers. Recent event studies have tended to use long event periods (Agrawal et al. 1992). This requires long periods when no other major events specific to that company occurs. Companies that have made more than one acquisition in the period are thus excluded from the sample.

The number of acquisitions conducted in the last 5 years will be included in this research as acquisition rate is relevant to building up a detailed picture on acquisition experience and the success method used in this research does not exclude it. Detailed hypotheses on acquisition numbers and rate will be developed in chapter 5 when company experience is examined. This leaves several variables relevant to this research which have only been explored by Kusewitt (1985). He utilised a capital market and an accounting approach to success, but did not use an event study method. This research is summarised below.

2.6 Other Variables

Kusewitt (1985) examined several other variables not explored by others. Those which initially seem relevant to this research are: market cycle, target profitability, and ratio of net income to consideration. Kusewitt's (1985) findings on these variables were:

a) Market cycle. Returns for acquirers were negatively correlated with the market cycle. That is, returns were higher when the market was below its long term trend line. Thus the tendency to overpay in boom times seems to negate the advantages of lower costs of capital.

b) Target profitability. The acquisition of profitable companies led to statistically significant better performance for the acquiring company for both accounting and market measures.[11] This compares to Morck and Shlieffer and Vishny (1990) who found that buying growth was negatively correlated with bidder returns and that this was significant. The acquisition target's growth was measured using sales growth over the 5 years before the acquisition.

c) Acquiree net income to price paid. Acquiree net income to price paid was not statistically related to performance. Kusewitt (1985) suggests the data on price paid may not be that reliable particularly regarding the valuation of payments spread over time.

The researcher chose not to incorporate the 3 variables above into this research because

a) The data required would remove the ability for the company to maintain the anonymity of the acquisition

b) Data on price paid may not be available, and requesting it may restrict further data collection

c) Tests based on market cycle would not yield insightful data as most acquisitions in the sample were from the same period

The external variables examined in this chapter, which use a contingency approach with success offer limited insight into the internal acquisition decision process. They provide the starting point to build up a wider picture of the factors that influence acquisition success.

2.7 Chapter Summary

The finance methodology based literature has made few concrete conclusions about what makes one acquisition more successful than another. Tender offers appeared to be more successful than mergers but this has recently been challenged. Relative size, the related hypotheses and the type of considerations influence on success are still disputed with studies not consistently finding evidence for or against them.

While these variables affect the process of acquiring, the effects are uncertain. Thus the author's research focuses on related acquisitions, made through tender offers. The sample included only 2 unrelated acquisitions. Related acquisitions were defined, as acquisitions into product areas in which a company already operated.

Mergers were excluded from the study and acquisitions were not differentiated by financing methods. This was because the informational content of using cash may be diluted if companies have a rights issues close to the acquisition, or use both cash and paper as consideration. Relative size and acquisition rates were included as variables in this research. The former resulting in the following hypotheses:

2:1) Relatively small acquisitions will perform worse than larger acquisitions

2:2) There is a size mismatch if the seller's turnover is less than 2 per cent of that of the buyer and the failure will be above the norm.

The author will now move on to examine the literature on the core areas identified in chapter 1, beginning with the search and screening phase

Footnotes

[1] For a definition of merger under companies Act 1989 see Samuels, Wilkes and Brayshaw 1989:609

[2] Average return on equity between 1968 and 1977

[3] Similar product same market

[4] Same product new geographic market

[5] Reprint of 1967 article.

[6] The divisions of relative size or the equity market value of the merging firms used were less than 50 per cent, 50 per cent to 100 per cent, and greater than 100 per cent

[7] Data on acquisitions of parts of organisations may not be available

[8] Fisher exact tests can be conducted where the minimum frequency is below 5. This is, however, valid only for tests using 2 dichotomous variables.

[9] These problems were outlined in section 1.4.

[10] The Williams amendment is an American Act which changed the bidding process. It is claimed it reduced bidder gains, Franks and Harris (1989:236), however, dispute this.

[11] The return on assets employed measure was significant at 99.99 percent and the market measure 95 percent (Kusewitt 1985:160).

Chapter 3 INFORMATION COLLECTION AND ACQUISITION SEARCHES

3.0 Introduction

Chapter two reviewed the finance literature and stated how this research incorporated the variables it explored

This chapter will explore the literature relevant to the information collection and search phase Figure 1 9 (in chapter 1) presented a subdivision of the information collection and search processes into initial information search, screen and information search This gives rise to three basic questions;

1) Where are companies searching ? That is, what are the limits of the initial search or screening criteria?

2) Who is the source of the idea?

3) How are companies collecting information on these potential acquisition candidates?

This chapter will address each of these questions in turn, beginning with, the limits companies might place on where they search for potential acquisitions

3.1 Where Are Companies Looking?

As stated earlier the academic research on the acquisition process is sparse To compensate, this review will use a broad range of literatures including literature directly on acquisitions, the strategic decision literature, and general management literature But it will begin by using the literature with the broadest focus of all, the general decision literature

The central feature of social science decision theory until the fifties was rational economic man. Rational economic man makes optimising decisions based on perfect knowledge. Simon (1976: xxvii[1]) in his introduction to Administrative Behaviour describes economic man as 'a complete and consistent system of preferences that allows him to choose amongst the alternatives open to him. He is always completely aware of what these alternatives are, there are no limits on the complexity of the computations he can perform to determine which alternatives are best, probability calculations are neither frightening nor mysterious to him.' The reason for examining rational economic man, is not that it might reflect reality. There is extensive evidence to suggest its assumptions are flawed, (Edwards 1967, Tversky 1967, Tversky and Kahneman, 1974), but that this is seen by the 'Classical' strategic management view as being an ideal to aim at: 'The most pervasive contribution of economics to strategy is the philosophical core of assumptions summed up in the ideal type of 'Rational Economic Man." (Whittington 1993: 16) That is, the dominant view of strategic management see rational economic man as an ideal to aim for.

If it is assumed that 'classical' strategic management aims to increase success, and this viewpoint is taken at face value, it seems that from the 'classical 'strategic management perspective, that the nearer to the rational economic man ideal a process is, the greater the success should be.

Given that rational economic man assumes that a decision maker is completely informed about all options, it seems reasonable to hypothesise that:

A complete search of all possible options would increase the probability of success ?

Unfortunately, it is impossible to test this hypothesis as there may be infinite options. In most cases it is only possible to prove not all options have been examined not that

they have. If all decisions are assumed to have infinite options and more options is nearer to infinite options than less options. The greater the number of options considered the nearer the ideal. Thus it is proposed to hypothesise that:

3:1) The greater the number of options formally considered the higher will be the level of acquisition success ?[2]

Equally it appears that this view implies that no options should be excluded by simple search rules. All options should be examined.

This contrasts with Simon's attempt to mirror reality, (Simon 1976: XXVII)[3] administrative man. Administrative man is different from rational economic man in 2 key areas:

a) Administrative man satisfices and does not make optimal decisions.

b) Administrative man does not examine all possibilities. He is content with simplifications because most facts are not considered relevant at a given time. He accepts solutions that perform satisfactorily (Simon 1976: XXIX and 81-84).

The concept of satisficing is closely tied to that of bounded rationality. The concept of bounded rationality is different from the concept of rationality included in economic man in three ways:

a) Knowledge of the consequences that will follow any decision is fragmented.

b) The future cannot be perfectly anticipated.

c) Only a few alternatives are considered. (Simon 1976: 39 - 41, Taylor 1970: 33)

The key change from economic man is that it replaces the assumption that the decision maker can examine all information and all options, but instead concentrates on a bounded area of information to search.

Bounded rationality accepts that a human can only process so much information at one time and so cannot have complete information in many decision making situations.

A decision maker will intend to be rational, but is limited by his or her cognitive powers. A decision maker therefore has to concentrate on a bounded area of information to search, as limited information searching and processing capacity would make the consideration of a very large number of sources of information and options difficult.

The concept of focusing on a bounded area to make decisions is supported by the 'popular' American management 'guru' book, In Search of Excellence, (Peters and Waterman 1982) as an effective decision making strategy for companies. They state, 'The numerative, rationalist approach to management dominates the business schools. It teaches us that well-trained professional managers can manage anything. It seeks detached, analytical justification for all decisions. It is right enough to be dangerously wrong, and it has arguably led us seriously astray.' One of their key conclusions is that companies should stick to their knitting. They claim that, 'Organisations that do branch out but stick very close to their knitting outperform all others.' (Peters and Waterman 1982: 293) This implies that companies should focus on what they already do and know. Search areas should be limited to industries a company already operate in, as acquisitions in these areas are more likely to be successful.

Haspeslagh and Jemison (1991) focus on the process by which a company limits its search area. They propose the view that 'formal screening exercises do not bring the wider benefits to ongoing business thinking that flow from considering acquisitions in the context of regular business planning.' (Haspeslagh and Jemison, 1991:83) That is, they see one off formal screening processes as a bad idea because, 'They are likely to introduce a more isolated analytical perspective and unnecessary momentum as pressure builds on those heading the screening project to come up with acquisition candidates that can get through the screen.' Thus implying screening processes may not be desirable in certain cases.

The results on the related hypothesis, outlined in chapter 2, seem to mirror this split, with some evidence supporting related acquisitions as producing greater success (Shelton 1988, Singh and Montgomery 1987) and other research showing that conglomerate acquisitions have performed better (Seth 1990a, Chatterjee 1986, Elgers and Clarke 1980, Wansley et al. 1983). Thus it is difficult to state an obvious direction for a hypothesis, as it is possible to argue that, both limiting an acquisition search to the areas in which a company already operates, and searching through all possible candidates will result in superior performance. This researcher chose to state the hypothesis in the form:

3:2) The existence of an established limitation to the area of acquisition search will increase success levels.

The measurement of success will be explored in chapter 6 which will present the methodology to be used in this research. This researcher expects hypothesis **3:2** to be difficult to tests as, few companies are likely to have no limitations to their acquisition search area.

The evidence from Peters and Waterman (1982) and the related hypothesis refers directly to the industry a company operates in as the factor that should limit the area it searches for acquisitions. Thus a sub-hypothesis examining this seems relevant:

3:3) Companies that place a limit on the industries in which they look to make acquisitions will perform better than those that do not.

There are, however, many other factors that a company might chose as a boundary to its search behaviour, if it chooses to limit its search. The general decision and management literature fail to offer much illumination of what to expect. The prescriptive literature on acquisitions though suggests some potential limits. Allen and Hodgkinson (1989A:38) see the first task in searching for an acquisition as being to 'draw up an acquisition profile.' They see these as covering 'Industry, size and

location, the criteria could relate to trading profitability, the scope for integration with current operations, signs of under valuation, tax status, growth prospects, riskiness relative to the existing business, corporate image, depth and quality of management and employee characteristics ' (Allen and Hodgkinson 1989A: 38-39) These criteria provide detailed limits to the area a company is willing to examine for an acquisition. Given that the book's aim is to 'be a real "guide to decisions" for managers' (Allen and Hodgkinson 1989A: XVI), it must be assumed that the items included in the profile are aimed at improving acquisition decisions and success.

Other prescriptive works suggest similar screening criteria (Jones 1982, Sandler 1988 21 and Kitching 1972, 1973, 1974) Kitching (1972:108) states: 'It saves time and improves the results to have some systems and procedures developed ' He sees the choice of industry and country as crucial These authors (Jones, 1982 , Sandler 1988:21 and Kitching 1972, 1973, 1974), however, unlike Drucker (As examined by Paine and Power, 1984) do not propose that companies must look at the same technology, markets or industry in which they already operate.

Thus this researcher proposes:

3:4) Imposing a limit on the geographic areas a company examines for acquisitions will increase success.

The use of a size filter as a search limitation will not be considered directly. This researcher, however, will examine hypothesis 2:1 that: Relatively small acquisitions will perform worse than larger acquisitions.

The more specific potential boundaries to searches proposed appear to be individual to each company and subjective. They are, therefore, difficult to examine. This researcher, therefore, will not propose hypotheses concerning: scope for integration, signs of under-valuation, corporate image and quality of management. It is, however,

not intended to only use closed questions to generate data on acquisition searches. Therefore if a company uses these as search limits, data will be collected.

The concept of search used so far in this chapter has assumed that the company is actively looking for an acquisition. The limits, however, proposed could equally be used as filters applied to acquisition proposals brought to the company by outsiders. No distinction will be made between strategic filters which are used to filter out ideas which arrive and those which are used to act as a limit to internal search behaviour. The next section will address this division between internal ideas and external ideas and how the source of the acquisition idea may affect its success, and the process that takes place.

3.1.1 Section Summary

This section has examined the proposition that companies might limit the areas they search for acquisitions. It generated 2 specific hypotheses covering limiting a search by geography and industry. Other possible search criteria were not made the subject of specific hypotheses, but data will be collected using open questions, so if other factors are used as filters, their existence will be detected.

3.2 Who Looks ?

The general decision literature does not address the issue of using other people to look for an option. The prescriptive literature, however, sees 2 main sources of acquisitions, using brokers or carrying out search work internally (Allen and Hodgkinson 1989A, Kitching 1972, 1973, 1974, Jones, 1982). Stallibras (1989 17) further divides internal sources into '1) The individuals responsible for the business units which make up the organisation, 2) the acquisition unit itself'. Besides these sources it is possible that a seller may approach a company directly. This gives three

basic sources of an acquisition idea the company, the seller, and a third party broker Of these three groups, Allen and Hodgkinson (1989A 41) suggest that internal ideas and processes should be more successful, ' Only by following the research method can buyers really be confident that they will end with a good deal' and, 'a further problem with broker (including merchant banks) proposed acquisitions is that many brokers will be on win fees and therefore keen to see an acquisition even if it is not in the interests of the buyer '

Haspeslagh and Jemison (1991 64) support this view that brokers may not be working in the best interests of a buyer 'Many outside advisers, especially investment bankers, have a major interest in consummating a deal because they are compensated on a transaction basis Because bankers' fees do not vary dramatically whether a deal takes three weeks or nine months to close, it is in their interest therefore to conclude the process quickly' ' The situation creates a serious problem Companies use these outside advisers to provide objective, professional advice, yet these advisers face a conflict between representing their own interests and those of their clients.'

Jones (1982 57) argues that, 'Caution must nevertheless be exercised when a company is offered for sale The potential acquirer should seek to discover the real motives for sale, these may include a business down-turn leading to loss-making, management friction, liquidity difficulties, or the desire of the owner to retire ' This view seems to be accepted by large companies Norburn and Schoenburg(1994 29) found, 'The effectiveness of external advisers was seen as marginally lower than that of internal personnel ' They further found that in their sample, of British companies acquiring in France, Germany, Spain and Holland in 1988 and 1989[4], only 20 per cent of the companies used a mergers and acquisition broker and 15 per cent banks in the initial search phase These companies were, 'typically publicly quoted companies with turnover in excess of £100 million '(Norburn and Schoenburg 1994 29) That is

brokers were viewed as less effective than internal staff in the search phase and therefore companies rarely used brokers in the search phase

The empirical evidence on British data does not, however, support the proposition that ideas resulting from outside the organisation perform worse. Hunt(1990:69), generating hypotheses from Kitching's European study (1973), proposed that, 'Seller-initiated acquisitions are more likely to fail than buyer initiated acquisitions.' He (1990:71) though found that 'the British study did not replicate this finding.' This, however, seems to suggest that this may be an option which can affect the success of an acquisition.

The above evidence implies there are three basic sources of an acquisition idea, the company itself, a seller, and third party brokers including merchant banks and that, which of these is used may effect the success of an acquisition. Given this, this researcher proposes that:

3:5) Acquisitions stimulated by brokers will perform worse than other types of acquisitions.

3:6) Acquisitions stimulated by the seller will perform worse than other types of acquisitions.

3:7) Acquisitions stimulated within the company will perform better than other types of acquisitions.

Further subdivision of internal sources into head office and operating units would also appear to be interesting but exploring it in a statistical way may not be possible. If a binary success measure is used for a chi-squared test to be valid at least 30^5 cases within the internal category, implying 90 cases in total if there was an even distribution between the three main categories. Secondly accurately determining whether an acquisition idea was the result of a head-office prodding an operating unit or the other way round may be difficult and depend on who is interviewed within an organisation.

Thus qualitative data which is collected in this area will be explored but no statistical work will be carried out

Examination of any hypotheses concerning whether the source of an acquisition idea affects information collection will be explored within the section of this chapter on information collection

This section has explored the source of acquisition ideas. The author will now move on to explore how companies collect information on these ideas to develop them into more formal propositions

3.2.1 Section Summary

This section examined the source of acquisition ideas. It proposed that external ideas from sellers, and third parties will perform worse than ideas generated within the company

3.3 Information Collection

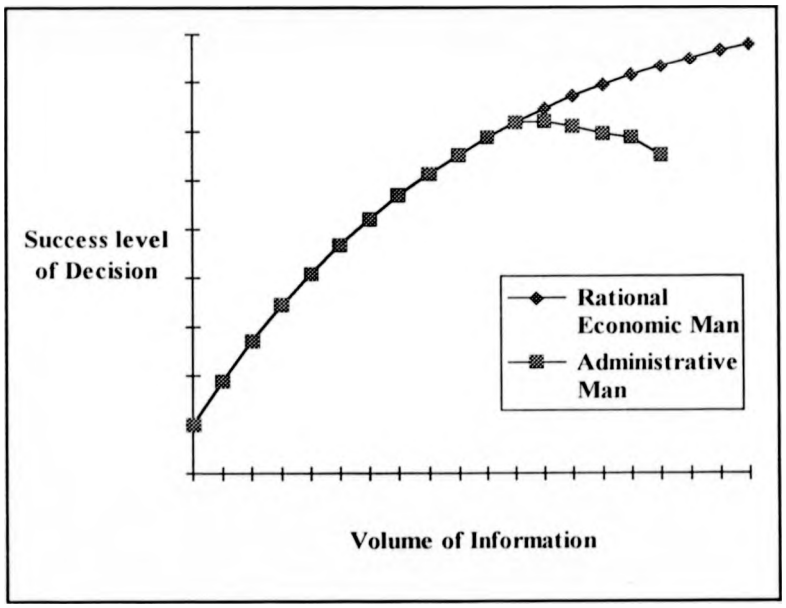
This section will examine how the literature expects companies to collect information to evaluate potential acquisitions. The researcher will begin by examining the classical strategic management's use of rational economic man as a goal.

If the classical strategic management perspective, that rational economic man is an ideal a company should aim at, is accepted (Whittington 1993: 16) it might be expected that the more information sources we examine the greater the success of an acquisition. The model which replaced economic man at the centre of decision theory Simon's (1976) administrative man, seems to support a different position. Given the central assumption of administrative man, that man has finite information processing

powers, he cannot examine all information, and therefore at some point additional information starts to have negative value, as the decision maker no longer can process information effectively That is, additional information no longer always produces additional benefit

This is illustrated in Figure 3 1 which plots the number of information sources against success levels for the decision based on them, for the rational economic man and 'Administrative Man' models

Figure 3.1 **Volume of Information Sources and Success Level**



Laboratory evidence on this is unclear Dukerich and Nichols (1991 120), reporting laboratory research on information searches, state 'Snyder and Swann (1978) and Shaklee and Fischhoff (1982) have characterised information searches as primarily

confirmation seeking, with decision makers truncating searches early.' Dukerich and Nichols (1991:120), though, found that information searches were influenced by the nature of information presented and that, 'The present research, which provided answers, indicated that truncated search does not always occur.' The evidence thus does not exclude the possibility that managers might use many information sources, as hypotheses generated from the perspective that rational economic man is a goal to be aimed at might lead us to expect.

Haspeslagh and Jemison(1991) state that managers have access to less information in acquisitions than in other capital budgeting decisions. This is for 2 reasons because, (1991:54) 'Managers in target firms are not willing to share this information with potential acquirers' and that, 'Operating managers who could better understand and interpret the data are frequently left out.' (1991:55) This could result in Simon's (1976) 'Administrative Man' model predicting the same as the rational economic man model for acquisitions, as the point at which information overload occurs and information has negative value is never reached.

The finance textbooks give little attention to how information is collected though detailed attention is given to how to identify the relevant cash flows for a project if all information is available.(Lumby 1989 Samuels, Wilkes and Brayshaw 1989). Samuels, Wilkes and Brayshaw (1989)state, 'In quantitative assessment it is vital that all and only all relevant cash flows are included in the analysis.' This assumption of all information being available is rarely valid in 'real' situations and thus offers little illumination of how finance theory expects managers to collect information.

Higson's finance text-book (1986) suggests that the decision maker should collect information until the marginal cost of the information is equal to the marginal benefit, that is the net benefit of the information is at its maximum. The method by which the

information is valued is not widely discussed, Higson (1986:51) states 'At this stage we ask the reader to accept that decision-makers may make judgements about the value of information.' The marginal benefit of information in acquisitions should be high because of the size and potential liabilities. If we accept that information will be difficult to obtain (Haspeslagh and Jemison 1991 54,58) then the administrative man model would appear to be consistent with the rational economic man model. This would seem to imply the hypothesis that:

3:8) The greater the number of information sources used the greater the probability of success.

Mintzberg (1975:52), however, found, 'Managers strongly favour the verbal media - namely telephone calls and meetings.' That is, managers favour verbal information and tend to ignore reports. It would therefore seem worthwhile also to test the following hypothesis:

3:9) The more people requested to provide information the higher the probability of success.

Higson's (1986) position would lead us to expect information with a low cost and high value to be collected first. This would primarily be internal information obtained from routine reporting and informal networks. Later in the process more expensive external information will be collected.

Thordsen et al. (1990) found that, if information was not easily accessible, decision makers did not acquire it. This supports the view that too some degree decision makers appear to be behaving as if they were following Higson's (1986) marginal cost rule. This researcher therefore proposes to examine this issue through the hypothesis:

3:10) Managers who are regularly circulated with information are more likely to use more information sources.

Even if information is not circulated, it should be easier to obtain if the organisation has already collected it. Thus it is proposed that

3:11) Managers at companies which collect market share data on markets which they do not currently operate in will use more information sources.

3:12) Companies which have corporate information libraries will use more information sources.

3:13) Companies that have arranged access to external corporate information libraries will use more information sources.

This researcher expects that most companies will collect information on the markets they are already present in. This would make tests invalid of the hypotheses that

Managers at companies which collect market share data on markets which they currently operate in will use more information sources.

This will, therefore, not be included as a specific hypothesis although data on it will be collected.

The prescriptions by the finance textbooks on information collection primarily relate to the relevance or not of certain information, or assume perfect rationality. This lack of advice by the finance literature may lead to a greater variety in search procedures as the one literature which provides clear prescriptions on certain areas of acquisition decision making does not do so on information collection. Thus experience may be more important.

Rasmussen (1993) found that experts would choose an information economic strategy only when the cost of observation was high. Time rather than information was the important criteria. Yates, McDaniel and Brown (1991) examining the ability of various groups to predict stock prices and earnings found that experts used more cues that produced more useless variation. This seems to be particularly relevant to this research since a key task in acquisition decisions is to generate predictions of future earnings.

Unfortunately the experts they used were MBA students. Shanteau (1992:253) reports though that 'Various studies, however, have reported that models of experts reflect surprisingly low information use (Goldberg 1970). Under use of available information has been reported for criminal court judges (Ebbesen and Konecni, 1975) medical pathologists (Einhorn, 1974) and clinical psychologists (Goldberg 1970).' Hershey et al (1990) similarly found that their novice decision makers collected more information though this was only significant at the 93 per cent level.

Devine and Kozlowski (1995:302), in contrast, state: 'With regard to past discrepancies in the expert-novice literature these findings suggest that high knowledge individuals in a given domain may perform better and access less information than low knowledge individuals only when the task environment is 'user friendly' (e.g. highly structured and or cast in terms familiar to the knowledgeable individual).... On the other hand, when tasks are ill structured or phrased in language that fails to facilitate recall, high knowledge individuals may resemble low knowledge individuals in terms of information search and performance.' Most acquisitions in comparison to Devine and Kozlowski's(1995) tasks appear to be ill structured as information may be collected from a variety of sources (Birley, 1976, Kitching, 1974, Haspeslagh and Jemison, 1991). A company which is actively being sold, however, might provide detailed structured information.

The evidence presented here contrasts with the classical model which would predict no difference between novice and experienced decision makers as they both would collect all relevant information. Shanteau's (1992) reporting of others work suggest experienced individuals used less information than other decision makers. Yates, McDaniel and Brown (1991), in contrast, found they used more sources of information. Devine and Kozlowski's(1995) found that it depends on the task.

Expertise, however, seems to have an influence on the number of information sources used. The nature of this relationship is, however, unclear. This research however cannot control the precise nature of the data collected as its data collection method will not be a laboratory experiment. The relationship will, therefore, be explored by examining the hypotheses

Expert decision makers use a greater number of information sources.

Expert decision makers ask more people for information

The definitions of expertise to used in these hypotheses will be specified in chapter 5, where the researcher will expand the hypotheses to take account of the experience measures developed. The contents of this chapter will now be summarised.

3.4 Chapter Summary

This chapter has examined the areas in which companies search for acquisitions and what information sources they use to base their decisions. It has proposed that the existence of limitations to a search area regarding both industry and geography may affect success. The second part of this chapter argued that the source of the stimulus to examine a specific company might affect the success of an acquisition. Third, this chapter considered that the number of information sources used might affect acquisition success and that the availability of information may effect the number of information sources used. Finally, it examined the effect of the experience of the person running the project and the number of information sources used. As a result of this review, the following hypotheses were generated.

3.5 Hypotheses Proposed in This Chapter

Number of Options

3:1) The greater the number of options formally considered the higher will be the level of acquisition success ?

Search Area

3:2) The existence of an established limitation to the area of acquisition search will increase success levels.

3:3) Companies that place a limit on the industries in which they look to make acquisitions will perform better than those that do not.

3:4) Imposing a limit on the geographic areas a company examines for acquisitions will increase success.

Source of Idea

3:5) Acquisitions stimulated by brokers will perform worse than other types of acquisitions.

3:6) Acquisitions stimulated by the seller will perform worse than other types of acquisitions.

3:7) Acquisitions stimulated within the company will perform better than other types of acquisitions.

Sources of Information Available and Used

3:8) The greater the number of information sources used the greater the probability of success.

3:9) The more people requested to provide information the higher the probability of success.

3:10) Managers who are regularly circulated with information are more likely to use more information sources, this will be tested as:

3:11) Companies which collect market share data on markets in which they do not currently operate will use more information sources

3:12) Companies which have corporate information libraries will use more information sources.

3:13) Companies that have arranged access to external corporate information libraries will use more information sources.

<u>Experience and Information Collection</u>

Hypotheses to be fully specified in chapter 5;

Expert decision makers use a greater number of information sources.

Expert decision makers ask more people for information.

This author having examined how the literature proposes companies do or should search for information and acquisitions, will next examine the literature concerning criteria by which companies are expected to evaluate acquisitions and how these should be applied.

Footnotes

[1] This is the third edition, it was originally published in 1945. The third edition however has an additional introduction, which is referred to here.

[2]All hypotheses to be tested will be number using the chapter number they are generated in followed by a number. These will be used in the empirical chapter to allow the sources of the hypotheses to be found.

[3] Originally published in 1945. The edition cited in this research was published in 1976 which includes additional material. This book will be cited as Simon (1976) in this thesis

[4] Their response rate was 70 completed questions out of 188 companies - 37 per cent.

[5] The minimum expected frequency for a chi-squared test to be valid is 5. The researcher however thought that assuming a perfect distribution between the categories would be risky.

Chapter 4 DECISION CRITERIA

4.0 Introduction

This chapter will examine the literature on the evaluation phase of acquisitions. The researcher will start by considering the financial appraisal literature that makes prescriptions about what techniques should be used to decide whether to proceed with a project. Acquisitions will be treated as a specific case of a capital investment decision. It will then examine the literature on the adoption of sophisticated techniques by companies. The decision literature will not be surveyed here as it offers little advice on precisely what criteria decision makers should use in a given situation.

4.1 Finance Literature

This section will review the financial appraisal literature concluding that it supports the use of the Net Present Value (NPV) method as the only evaluation technique that always produces a value maximising result.

The financial investment appraisal textbooks usually present 5 methods for making decisions on capital investment projects. Those commonly presented by the textbooks are payback period, accounting rate of return (ARR), earnings per share (EPS) internal rate of return (IRR), and net present value (NPV). Option pricing methods are not considered. Textbooks, only mention the possibility of using option pricing as a tool to analyse investment decisions involving physical assets. Limited empirical work has been done on option pricing of investment decisions involving physical assets. Data collection techniques, however, will be sufficiently open to allow data to

be collected on the use of option pricing. This review will now examine the textbook view on each of the methods listed above.

4.2 Payback

The payback period is rejected by the finance literature as a method for evaluating financial investment decisions. The reasons behind the rejection of payback are twofold, it fails to take account of; 1) cash flows after the payback period, and 2) the time value of money. The latter problem can be overcome if a discounted payback is used, this still though does not take into account the cash flows after the payback period.

The problem of not taking into account cash flows after the payback period is a particular problem if there are negative cash flows after the payback period such as at the end of the life of an oil rig or quarry. A further problem with payback period as a criterion is that it has no clear fixed objective decision rule. It may be possible to rationalise longer payback periods for longer projects.

The traditional textbook view on payback is best summarised as: 'Clearly the payback investment appraisal method does not meet the requirements of our decision rule ... the reason being that - even allowing for the fact that it can be adapted to allow for the time value of money - it uses *speed of return*, rather than rate of return as its criterion of project desirability.' (Lumby, 1988:53)

There are some advantages to this method. First, ease of use. It requires shorter term projections than other methods. Second, it is also a precaution against over optimistic cash flow projections as these are likely to be concentrated in later years.

The textbook view thus appears to be divided into two. Some argue that the payback period should not be used as it hinders decision making because it may offer a contradictory view to NPV. 'The trouble with simple rules of thumb like payback ... is that they may not give results that are consistent with NPV.' (Higson, 1991:143) Others see it is a useful secondary measure to guard against the effects of biased forecasting. Franks, Broyles and Carleton, (1985:71) conclude: 'The payback period should be considered mainly as a measure of liquidity and as an extra safeguard against the effects of biased forecasting.'

If it is assumed that the textbooks aim is to provide organisation with tools to help them be successful, the above rejection of the use of payback seems to imply that, the use of payback as a decision criterion will reduce acquisition success. This researcher therefore proposes:

4:1) Use of payback as a decision criterion will reduce success.

4.3 Accounting Rate of Return

The second measure commonly considered by textbooks is accounting rate of return. The accounting rate of return (ARR) as an investment decision criterion has two main advantages.

1) It is simple to operate (Higson 1991:146).

2) It focuses on measures that are used to report a firm's operating performance. Pike and Dobbins (1986:281) state, 'Part of the case in favour of retaining the ARR lies in the fact that its absence leads to an inconsistency between methods commonly used to report a firm's operating results and the techniques most frequently used to appraise investment decisions.' Lumby (1988:34) says, 'management's success or failure in taking financial decisions *in aggregate* is judged on the basis of the company's return

on capital employed (amongst other things). Therefore it appears sensible that individual investment decisions should be taken on the same basis.'

The main disadvantages of ARR are:

1) It is not based on cash flows (Sizer 1989:277)

2) It fails to consider the timing of returns (Samuels, Wilkes and Brayshaw 1990:123, Sizer 1989:277)

3) Accounting rates of return are based on accounting data which is not prepared for decision making purposes.

4) Lack of definition of capital employed. (Samuels, Wilkes and Brayshaw 1990:123) The lack of definition of capital employed is particularly open to abuse in an acquisition situation where the write-down of asset values may be taking place. A solution to this is to use a value based on consideration plus necessary corrections for asset sales and changes in working capital. This though may not give a value comparable to a company's normal accounting practice, one major benefit of the accounting rate of return.

Lumby (1988:34) sums the textbook view on payback and accounting rate of return, 'In sum these two techniques may be suitable as initial screening devices or to evaluate small, short-lived projects. However, they should not be used otherwise, with the possible exception of discounted payback.'

Acquisitions clearly do not fit into the category of short-lived projects and are usually not that small. In conclusion, the attitude of finance textbooks to payback is that it should only be used as a measure of liquidity, and that ARR should not be used. Higson (1991:147) states ' We firmly believe that the decision maker should use the best rule available, nor do we think the DCF *(Discounted Cash Flow)* rule is too

sophisticated for the manager to employ.[1] Given the above it seems to reasonable to hypothesise that:

4:2) Use of accounting rate of return as a decision criterion will reduce success

4.4 Earnings Per Share

Earnings per share as a decision criterion in the eyes of the finance textbooks suffers from the same problems as ARR: 'Again, this calculation ignores cash flow, timing and risk..... It does not tell us whether the cash flows generated by the project are worth more than the present value of the cash outlays ' (Pike and Dobbins, 1986:47). EPS is not considered by Carsberg (1974), Higson (1991), Lumby (1988), Sizer (1989) and Samuels, Wilkes and Brayshaw (1990) as a technique for appraising capital projects in their textbooks on financial decision making. Pike (1983) examining the use of capital appraisal techniques, did not ask about the use of earnings per share. This researcher, therefore, hypothesises that:

4:3) Use of Earnings per share dilution as a decision criterion will reduce success

This leaves the manager with discounted cash flow methods to evaluate projects.

4.5 Internal Rate of Return and Net Present Value

The textbook view on IRR is that as a method it will give the correct (Value maximising) answer if used properly. Higson(1991:92) defines IRR as, 'IRR measures the yield of a set of cash flows in percentage terms and is the discount rate which makes the NPV (*Net Present Value)* of the cash flows equal zero. Mathematically it is R in the following formula:

$$NPV = \sum_{t=0}^{n} \frac{C_t}{(1+R)^t} = 0$$

Where C_t = cash flows in period t '

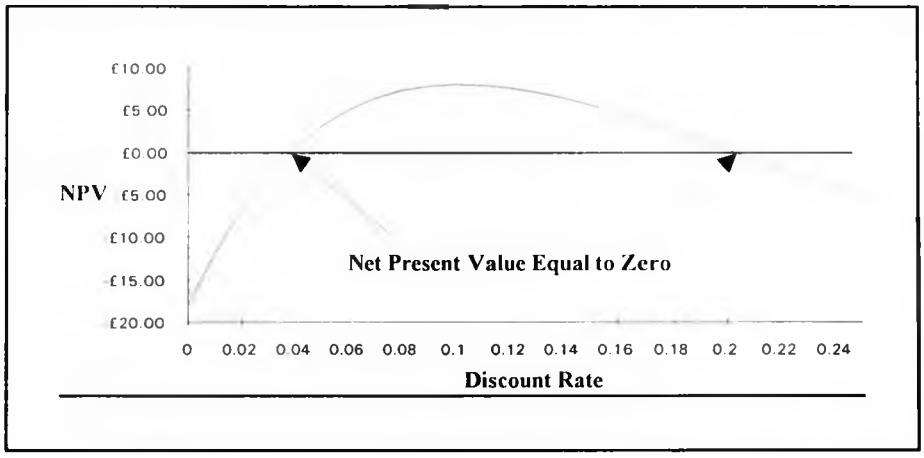
There are four problems with the application of IRR:

1) If a project has more than one change of sign in the cash flows there may be more than one solution or none at all. This is illustrated in figure 4.1, where the net present value of the cash flows of project A shown in table 4.1 are plotted against the discount rate.

Table 4.1 **Cash Flows For A Project A**

Year 1	Year 2	Year 3	Year 4	Year 5
-120	44	44	44	44
Year 6	Year 7	Year 8	Year 9	Year 10
44	44	44	44	-250

Figure 4.1 **Discount Rate Against Net Present Value for Project A**

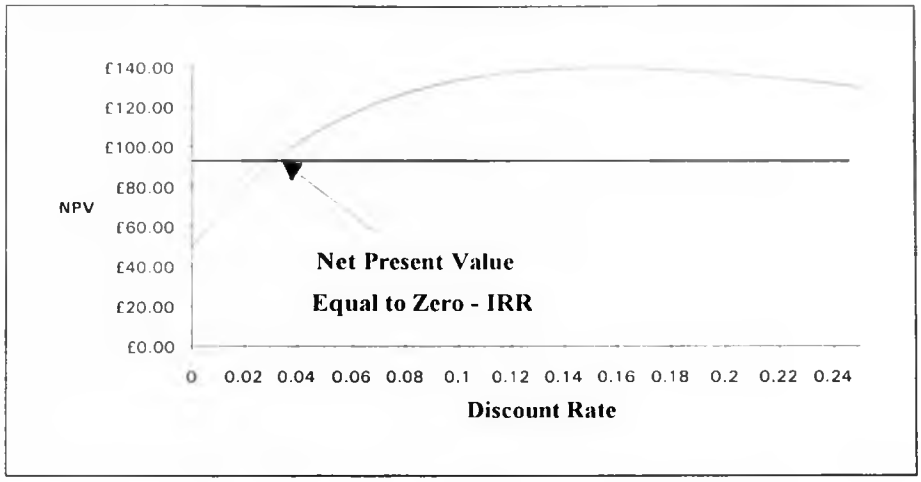


2) If a project has negative cash flows after positive, a project should be accepted if IRR < opportunity cost of capital. This is illustrated in figure 4.2, where the net present value of the cash flows for project B shown in table 4.2 are plotted against the discount rate.

Table 4.2 **Cash Flows for A Project B**

Year 1	Year 2	Year 3	Year 4	year 5
50	50	50	50	50
Year 6	Year 7	Year 8	Year 9	Year 10
50	50	50	50	-400

Figure 4.2 **Net Present Value Against Discount Rate For Project B**



3) Use of correct rates for comparison. Short term projects should be compared to the short term cost of capital and long term projects to the long term cost of capital.

4)The IRR does not take into account the size of projects so where two projects are mutually exclusive an IRR may give an incorrect indication.

The view of most textbooks is that IRR is acceptable but not as theoretically correct as NPV. Some, however, take a more rigid position: 'The strong conclusion ... is that for several reasons the IRR investment appraisal technique is - just like payback and ROCE (*Return on Capital Employed)* /ARR - unsatisfactory. Therefore, only NPV remains as an investment appraisal technique which will give consistently reliable advice which will lead to shareholder wealth maximisation'[2] (Lumby, 1988:110) This leaves net present value as the only technique the finance literature supports to evaluate investment decisions. The reason for using NPV, given the decision rule of

taking all projects with a NPV greater than zero, are that it maximises the wealth of shareholders.

In conclusion, the position of most textbooks on these measures is clear Companies should use NPV, and if necessary, IRR but not payback or accounting rates of return Higson (1991 147) concludes 'We firmly believe that the decision maker should use the best rule available, nor do we think the DCF rule is too sophisticated for any manager to employ' and Samuels, Wilkes and Brayshaw (1990:162) 'The correct procedure is of course discounted cash flow methods, preferably NPV but also if used appropriately, yield(*IRR*)'

Thus the finance literature would expect companies not using discounted cash flow techniques to perform worse The more rigid would also expect those companies using other criteria besides discounted cash flow techniques to perform worse than those only using discounted cash flow

Considering the above, this researcher proposes that the use of discounted cash flow measures as decision criteria will increase acquisition success as they are the valid criteria supported by the finance literature Therefore the following hypothesis is proposed:

4:4) Use of DCF measures as a decision criterion will increase success

As NPV based measures have been implied to be superior to IRR measures it is also proposed that:

4:5) Use of NPV as a decision criterion will increase success rates

Finally the use of only NPV as a decision criterion is proposed by Lumby (1988:110) while other authors have implied it is superior to IRR (Samuels, Wilkes and Brayshaw, 1990:162 and Higson 1986:147). It is proposed, therefore, that:

4:6) The use of only NPV as a decision criterion will give an increased success level.

This is supported by Pike's (1988) empirical work, which found significant positive associations between the use of DCF techniques and higher levels of capital investment effectiveness.

This leaves the question as to what discount rate should be used to calculate net present value.

4.6 Discount Rates Used

The textbook finance approach states the discount rate used should be the cost of capital relevant to the acquisition. That is, it should reflect the specific risk level of an acquisition. Schlosser (1992:323) states 'the discount rate we recommend you to use for screening strategic alternatives is the cost of unlevered equity, the return expected by the financial markets when they provide equity to the industry in which you are investing.' This approach, the adjusted present value (APV), requires the financing side-effects of a project and the project to be evaluated separately, the calculation of this though is problematic. The recommended method to establish a discount rate that reflects the risk involved in a project has been to use the capital asset pricing model to establish the return required by the market for a quoted company operating in the same industry as the acquisition. This rate should then be ungeared.

This though raises problems of finding a quoted company in the same market, and being able to ungear the beta. A problem with acquisitions compared to capital investment projects is that the target may operate in more than one market, thus requiring the cash flows to be divided and appropriate rates applied to each set. Cash flows should also be divided by country if the target operates in more than one country and different discount rates applied for each country reflecting their individual risk. Thus an acquisition should not be discounted at a fixed established rate, unless that rate has been established specifically for that industry and country.

An alternative to this is to use the weighted average cost of capital (WACC). This incorporates the values of financing side-effects by using a lower discount rate. This assumes a constant target mix of financing which remains constant over time.

The main problem with WACC though is that it is an average for the whole firm, the capital for an individual project may have different risk levels, and the project may bring different financing costs and benefits including tax shields. Schlosser (1992:319) states, 'The WACC approach is simple and popular but it makes a very strong assumption about the existence of a target capital structure, a notion which is intuitively appealing but challenged by a number of theoreticians and practitioners... We would therefore recommend that you use the APV approach, which has the advantage of forcing you to make an explicit assumption about the financing side effects in each situation you analyse. When a problem is complex, it is always preferable to remain aware of the assumptions you make.' Schlosser concludes (1992:324) 'You will probably use the cost of equity as the discount rate for calculating the net present value of strategic alternatives.'

The problem with the APV approach, that of using an ungeared beta to establish a return and then evaluating financing benefits separately is that it is complex, time

consuming and may well require to be done at head-office level. Higson (1991:288) states ' We suspect that APV will only be attractive when the project in question is sizeable and the firm believes its financing costs - tax advantages, issue costs and so forth - are significantly out of line with the rest of the firm ' This may be the case for all but the smallest acquisitions.

An alternative approach is to calculate a divisional beta and use this for projects. The extent to which this reflects risk will depend on how homogeneous the divisions are in terms of factors which cause business risk. This reduces the time costs while maintaining accuracy.

The most theoretically sound position is to use an adjusted present value discounted using a rate established specifically for that project from ungeared equity rates.

Fixed hurdle rates should not be used in most acquisitions, the rate should be established for each project, and reflect the project risk not that of the organisation as a whole. This researcher therefore hypothesises that:

4:7) The use of fixed hurdle rates will lower success levels.

This chapter so far has examined what theoretically companies should do. It will now examine what researchers have found companies are doing.

4.7 Empirical Evidence on Use of Capital Budgeting Techniques

There has been extensive work in the United States on the use of sophisticated budgeting techniques: Gitman and Mercurio (1982), Haka, Gordon and Piches (1985), Klammer (1972), Klammer and Walker(1984), Petry and Sprow(1993) and Pruitt and Gitman (1987). These, however, may not be relevant to the British environment. This review will therefore focus on recent British studies in this area: Carr, Tompkins and Bayliss (1991), Neal and Buckley (1992), and Pike (1983, 1988). Older British papers Rockley, (1973), and Scapens and Sale, (1981) will not be used in the light of Pike's (1983,1988) findings that use of discounted cash flow techniques has increased markedly since the early seventies. It also should be noted that the only study which explicitly examines acquisitions is Petry and Sprow (1993). This, however, is an American study.

Pike (1988) by following up his previous work on the adoption of sophisticated investment analysis (1983) gives a picture of the rate of adoption of discounted cash flow techniques without taxing mangers memories as to what methods they previously used. The sample frame is, therefore, limited to those companies that responded to the first survey, large companies, which should make Pike's(1983, 1988) research more relevant to this work as this research focuses on large companies.

The main results of Pike's (1988, 1983) work are shown in table 4.3 and table 4.4
Table 4.4 clearly shows that discounted cash flow techniques are being increasingly adopted by large British companies but that a significant minority of companies are not using discounted cash flow techniques (16 per cent). No company only used NPV as the strictest theoretical interpretation would recommend and only two per cent used only IRR.

Table 4.3 **Percentage of Companies Using Capital Investment Evaluation Methods**

Appraisal Technique	Pike's British Data			Petry and Sprow US Data 1990	
	1985	1980	1975	Industrial and Retail Firms	Financial Services
Payback	92	81	73	88.7	81.4
Average Accounting Rate of Return	56	49	51	47.8	61.8
DCF Methods (IRR or NPV)	84	68	58		
IRR	75	57	44	86.3	85.2
NPV	68	39	32	88.6	88.9
Part of Table 2, P345 Pike, 1988.				Part of Table 2, P363 Petry and Sprow, 1993	

Other recent British literature does not offer any comparable figures. Petry and Sprow's (1993) American results are of a similar magnitude although they show greater adoption of DCF techniques and lower levels of use of payback, in the United States in 1990. This may, however, be a factor of either, later date or a different country. These results seem to suggest that although discounted cash flow techniques have been adopted by most companies a minority do not use them. Very few companies use DCF techniques exclusively, while the less theoretically preferable IRR is more common in the United Kingdom and about as common as NPV in the United States.

Table 4.4 Percentages of Companies Using Combinations of Capital Budgeting Techniques as Found by Pike (1988)

	1985/1986	1980/1981	1975
No Method Used	0	0	2
Single method			
PBK	6	12	14
ARR	0	7	12
IRR	2	4	5
NPV	0	1	0
	8	24	31
Two Methods			
PBK and ARR	10	13	14
PBK and IRR	8	14	14
PBK and NPV	5	6	4
ARR and IRR	2	2	0
ARR and NPV	1	1	1
IRR and NPV	3	4	1
	29	40	34
Three Methods			
PBK, ARR and IRR	5	10	7
PBK ARR and NPV	3	4	4
PBK, IRR and NPV	11	9	10
ARR, IRR and NPV	10	1	1
	29	24	22
Four Methods			
PBK ARR IRR and NPV	34	12	11
Total	100 %	100 %	100 %

P346, Table 4, Pike 1988

IRR - Internal Rate of Return ARR - Average Accounting Rate of Return

DCF- Discounted Cash flow NPV - Net Present Value

PBK - Payback

Petry and Sprow's(1993) data on acquisitions, shown in table 4.5, does not consider the use of such techniques as Payback, EPS dilution or ARR. Its results are thus difficult to compare to Pike's(1983,1988) work and Petry and Sprow's other data. Discounting methods however, are the most commonly used in all three of their groupings.

Table 4.5 Percentage of Companies Using Technique to Value Potential Acquisitions

Technique	Industrial/Industry	Financial/Services	Utilities
Discounted future firm cash flow	63.8	64	53.8
Discounted future firm free cash flow	57.5	36	73.1
P/E comparisons with similar firms	56.3	80	57.7
Discounted future dividends	3.7	12.0	23.1
Court determined model	2.5		3.8
Miscellaneous	11.3	12	11.5

P373, Table 12, Petry and Sprow, 1993

Hunt et al 's (1987) results on the reasons for acquisitions are likewise difficult to compare to Pike (1983, 1988). Hunt et al (1987) found that 1 company out of 40 mentioned improvement in earnings per share (EPS), 13 improved return on investment (ARR), 6 assets, and 13 management capability as reasons for their acquisitions. This though does not directly address the issue of whether and which capital budgeting techniques were used.

Another area which Pike (1983, 1988) examined is the effect of size of company on adoption rate. The theoretical literature would not expect any difference by size of the bidding company, industry, or experience of the people involved. The evidence, however, collected by Pike (1983:206, Table 5) would suggest otherwise, 'The use of DCF methods is strongly associated with size, particularly in the case of the internal rate of return method (IRR)' (Pike 1983:205). Thus this researcher proposes the following hypothesis:

4:8) Larger companies in terms of sales will show an increased propensity to use discounted cash flow measures.

The value of an investment should affect the process although this should only occur for small acquisitions where the value and potential costs of an acquisition do not warrant the investment of time in information collection or the use of the net present value technique. This should be rare in an acquisition as the potential costs include potential liabilities which may be much larger than the initial investment. This section has examined the empirical literature on use of capital evaluation techniques. Larger companies were found to adopt discounted cash flow measures earlier than smaller companies. The author will now briefly refer to the strategic evaluation proposed by the practitioner aimed literature.

4.8 Strategic Evaluation

Strategic fit is a topic which is much talked about in the practitioner aimed literature (Jones 1982, Kitching, 1972, 1973, 1974) It though primarily concerns the related hypothesis, which was considered in chapter two As stated in chapter two, it is unlikely that the sample in this research will contain sufficient unrelated acquisitions to allow an investigation of this.

The use of strategic filters covering the industry and country a company acquires in was considered in chapter 3 within the search process. The other potential filters proposed size, trading profitability and signs of under valuation, were not made the subject of direct hypotheses but will, along with the hypotheses on industry and geographic area, be considered in the empirical chapters within the chapter on acquisition searches, rather than within the chapter on the evaluation phase.

4.9 Chapter Summary

This chapter has examined which decision criteria the financial literature recommends to be used and which criteria empirical studies have found companies are using.

It has concluded that (Pike and Dobbins, 1986:47)'Payback period, discounted payback period, ROCE *(an accounting rate of return measure)* and EPS effect have serious shortcomings as techniques for assessing capital projects'[4] 'The correct procedure is, of course, discounted cash flow methods, preferably NPV but also if used appropriately, yield (*IRR*)'[5](Samuels , Wilkes and Brayshaw, 1990 162)

The empirical work has found that DCF techniques are increasingly being used (Pike, 1983, 1988). However, they have not been adopted by all companies and they have rarely been adopted as the only method as the strictest interpretation of the theoretical literature would recommend. The literature expects these methods (discounted cash flow techniques) to be applied whatever the size of the company. Some evidence however, contradicts this (Pike 1983)

Finally, the author considered that the use of strategy as a decision criteria was effectively covered by the previous chapter when it considered the limits companies might place on the area it searches for acquisitions.

As a result of this examination of the literature the following hypotheses were proposed :

Criteria Used

4:1) Use of payback as a decision criterion will reduce success

4:2) Use of accounting rate of return as a decision criterion will reduce success

4:3) Use of earnings per share as a decision criterion will reduce success

4:4) Use of DCF measures as a decision criterion will increase success

4:5) Use of NPV as a decision criterion will increase success rates.

4:6) The use of only NPV as a decision criterion will give an increased success level.

Use of Hurdle Rates

4:7) The use of fixed hurdle rates will lower success levels.

Differences in Behaviour Between Companies

4:8) Larger companies in terms of sales will show an increased propensity to use discounted cash flow measures

This chapter has examined what criteria the finance literature expects companies to use and what criteria companies have been found to be using in empirical studies. The next chapter will examine how experience, management resources and the use of consultants affect the acquisition process and the success of acquisitions.

Footnotes

[1] Italics added

[2] Italics added

[3] Italics added

[4] Italics added

[5] Italics added

Chapter 5 EXPERTISE, MANAGEMENT RESOURCES AND THE USE OF CONSULTANTS

5.0 Introduction

Chapters 3 and 4 examined how companies look for an acquisition, and how they collect information and then process it into a form in which they can make a decision. This chapter will focus on 2 issues, expertise and management resources. Within expertise the researcher will include both company and project manager's experience. The researcher will also take a broad view of management resources and include the use of consultants as substitutes for internal resources. The researcher will begin by examining the literature on the effect of expertise and experience on decision making.

5.1 Expertise and The Acquisition Process

This section will examine 2 general decision theories that have focused on experience; Klien's (1993) rapid primed decision model and Abelson's (1976) script processing model. It will then review the evidence provided by the literature on expertise, to generate hypotheses. In those areas where there is an external measure available, for example chess, the distinction is clear, in other areas it is not. Yates, McDaniel and Brown's (1991) study used graduate students compared to undergraduate students, Day and Lord (1992), Chief Executive Officers, and MBA students. This researcher will use the terms used in each paper. Before precise hypotheses are presented the researcher will specify the definitions of experience to be used in this research.

5.1.1 Klien's Rapid Primed Decision Model and Abelson's Script Processing Model

Experience is the central element of Klien's(1993) Rapid Primed Decision (RPD) making model. This model sees decision makers as recognising the situation, then assessing the feasibility of the typical response before implementing it. This relies on the decision maker having previously experienced a similar situation. A key element of this model is, however, the time scale involved. Klien (1993) tested this model on fire commanders, platoon leaders and design engineers using a case study methodology on 'real' decisions. He found that between 46 and 80 per cent of decisions fitted the RPD model. Analytical strategies were more frequently used by less experienced decision makers.

Doherty (1993) critiquing Klien et al.'s (1993) naturalistic perspective sees the use of case studies as a problem. He states (Doherty, 1993: 384) 'The fire ground commander's assertion that he only thought of one way to put out a fire cannot be taken as evidence against the hypothesis that alternatives were weighed and dismissed by unverbalized, preattentive processes.' This methodological argument between laboratory based decision research and the naturalistic perspective is not relevant to this work. It is impossible to examine the acquisition decision in a laboratory. The factors which separate it from textbook finance approach would be lost, particularly time pressure and uncertainty.

If Klien's (1993) RPD model is compared to Simon's (1976) administrative man, the importance of experience becomes more explicit. To recognise a situation requires having already experienced a similar situation. This would imply that extensive experience of other decisions would not be particularly valuable in an acquisition situation. Simon's model in contrast appears to assume analytical processing that could be learnt in another decision environment.

Klien's(1993) model, however, assumes a very short time-span Acquisitions tend to occur rapidly but not as rapidly as the decisions required by firemen or soldiers Thus models that focus on a longer time span seem to be more relevant to the acquisition situation

Abelson's (1976) script processing appears to retain a focus on experience, and has no implicit time-frame, unlike Klien's (1993) model, which explicitly focuses on rapid decision making By script, Abelson means 'a coherent sequence of events expected by the individual, involving him either as a participant or as an observer' (Abelson 1976:33) Scripts, in Abelson's view, can be used in 3 ways in decision making: episodic, categorical and hypothetical. Abelson gives the example of use by an admission's tutor to explain each. 'In the episodic version, a past single case would be recalled similar to the present applicant.' 'In the categorical version a generic type would be invoked by assimilating the application to a category ' 'At a more abstract level, the applicant can be seen as a bundle of pros and cons where success is a hypothetical variable darkly contingent on all the important innumerable features.' (Abelson 1976:37) The first 2 of Abelson's models seem to closely mirror the process that Klien's(1993) rapid primed decision maker would go through, assess the situation and find a historic example of it The main difference, as mentioned above, seems to be the time scale

5.1.2 Empirical Evidence on Individual Experience

The indirect evidence, on Abelson's (1976) models and Klien's model, is divided Calderwood, Klien and Crandall (1988) examining time pressure and skill level in chess players found that time constraints have a greater detrimental effect on less skilled players They suggest rapid holistic processing becomes increasingly important at higher levels of skill. This study is particularly relevant to the acquisition situation as

it compared skilled and highly skilled players, unlike many studies, which used students. Chase and Simon (1973) comparing masters, class A players and beginners found that (1973:273) 'Chess skill depends in a large part upon a vast, organised long-term memory of specific information about chess board patterns.' They conclude that, 'the overriding factor in chess skill is practice' 'The organisation of the master's elaborate repertoire of information takes thousands of hours to build up, and the same is true of any skilled task.'

Shanteau (1992:254) summarising the cognitive-science research literature states 'Studies within this tradition have shown expert superiority over novices in nearly every aspect of cognitive functioning from memory and learning to problem solving and reasoning (Anderson, 1981) ... experts in physics, mathematics and computer programming reveal similar superior skills (Mayer, 1983)'

This contrasts with how he sees the judgement and decision making literatures' view of experts, (Shanteau, 1992:253); 'the judgement and decision making literature paints a dismal picture of the ability of experts' Yates, McDaniel and Brown, (1991) found less expert subjects performed better in predicting stock price and company earnings. They found (1991:77) that, 'although we might expect that greater experience will lead to demonstrably greater accuracy, it instead simply results in more useless variation in judgements.' This they see as a product of the experienced forecaster adding more cues to their decision making without disregarding erroneous ones, because of the complex nature of the causality, and hence limited feedback, unlike chess. Experienced forecasters thus make worse decisions because they overload their limited processing power. How expert or experienced the graduate students used in this work were, is open to question. This contrast between Yates, McDaniel and Brown (1991) and Shanteau's (1992) view of the decision making literature that experts use only limited information and that this is not ideal, led the researcher to propose in section 3.3 the

hypotheses that: A) **Expert decision makers use a greater number of information sources, and B) Expert decision makers ask more people for information**

Yates, McDaniel and Brown, (1991) result that experienced decision makers are more variable in their conclusions is supported by Day and Lord (1992), who found experts to be significantly more variable in their categorisation to sort problems. They found, however, their experienced decision makers (Chief Executive Officers) to be significantly faster than their inexperienced decision makers (MBA students). If general decision ability were a factor, the MBA students would be expected to perform no slower than the chief executive officer's (C.E.O.'s), which they did. Day and Lord (1992:43) found 'it appears that well-developed knowledge structures allow C.E.O.'s in this industry *(machine tools)* (i.e., experts) to make relatively quick decisions about which problems belong (or do not belong) together.'[1] They, however, state (1991:45) that, 'It is important to note that those with little experience also might reach effective solutions to such problems.'

To study the conflicting evidence on the effect of experience and expertise Devine and Kozlowski (1995:303) setup a test relating to basketball. In this, the participants were divided into high and low knowledge groups using a paper test. They were then asked to predict team behaviour in a series of scenarios. Devine and Kozlowski (1995) found that,' (1) high knowledge individuals were more accurate than low knowledge individuals for well structured decisions but no better when decisions were ill-structured, (2) high knowledge individuals reduced information search when decisions were well-structured decisions and alternatives were descriptively labelled (in comparison to information search for ill-structured decisions and when alternatives were nominally labelled) and (3) high knowledge individuals utilised contextual information considerably more than low knowledge individuals.' The problems used in this research, however, had a definite correct solution, unlike the situation managers

face when conducting acquisitions further the problems were fairly simple in comparison to the acquisition situation. The researcher, however, cannot modify the structure of the acquisition decision that companies face Acquisitions are complex and ill-structured in comparison to tasks set in experimental studies

Eisenhardt (1989) found fast-decision makers' used more information than slow decision makers', and fast decisions were associated with superior company performance That is, fast decision makers use more information and perform better (Eisenhardt 1989) and experts are faster and more variable at categorisation Where there is limited feedback or structure to the information, as in the acquisition situation, experts appear to use more information rapidly resulting in more idiosyncratic and variable results than novices This seems to imply some form of individual decision tool, as in Abelson's script processing, but that experience becomes more relevant in decisions where little time is available as in Klien's (1993) model The only work directly on Abelson's (1976) script processing is Hershey et al (1990) who conclude that 'Our results suggest that both search and selection strategy vary markedly as a function of expertise' and 'the use of these scripts we believe, leads to decreased solution times and more efficient patterns of information processing.'

Zakay and Wooler(1984) found that, under time pressure decision makers, abandoned the normative decision rule they had been taught to use, and those that had not been taught the multi-attribute utility model performed better than those that had This would suggest that under time pressure learnt rules are abandoned and replaced by other experiences. If an acquisition were therefore conducted under greater time pressure than other decisions, learnt rules might be dropped in favour of knowledge built up through experience

Thus the researcher proposes that expertise will effect the decision process The literature however falls into 2 groups, as illustrated by Shanteau (1992), the decision

literature which views experts as poor decision makers and the cognitive-science research which produces positive results. Thus the researcher proposes the hypothesis that

Expertise in acquisitions will increase success levels.

There is, however, a clear problem in defining what expertise is. Research using chess has used its class A, master, and grand-master ratings. This is not applicable to acquisitions nor is the test approach used by Devine and Kozlowski (1995), as it is unclear what knowledge is relevant. Similarly the use of professional qualifications in accountancy or an MBA, as a standard assumes the process is about only using accounting data or skills learnt in a business school. Given that, Day and Lord (1992) found those experienced in an industry performed better than MBA students, this would seem invalid.

Shanteau(1992:255) proposes that the domain should define the expert and that expertise is reflected in 'consensual acclamation.' This is not an option for this research, as it would require revealing who has agreed to be interviewed to the very people that companies would least wish to release information. The evidence put forward by Yates, McDaniel and Brown(1991) and Day and Lord(1992) seems to imply they are focusing on experience as does Klien's (1993) model and explicitly Tubbs(1992) work on auditors organisation and amount of knowledge. This removes a problem of defining expertise as instead experience is measured. The above hypothesis thus becomes

Experience of acquisitions will increase success levels.

Shanteau's (1992:254) review of the cognitive science literature states that' first, expertise is domain specific.' This could imply 2 facets of experience as relevant, acquisitions or the organisation and industry environment.

The importance of lack of feedback proposed by Yates, McDaniel and Brown, (1991) and Shanteau(1992) implies that both completed acquisitions and those acquisitions which were considered but not completed, are relevant to the level of experience. The researcher therefore proposes to test the above hypothesis as:

5:1) The greater the number of acquisitions completed by a manager the greater probability of an acquisition being successful.

5:2) The greater the number of acquisition reviews carried out by a manager the greater probability of an acquisition being successful.

Given Day and Lord's(1992) evidence that executives experienced in an industry performed differently to those with general management decision making skills, the researcher proposes that the experience of a manager within in an industry will also influence success. Much literature including Haspeslagh and Jemison(1991:143) proposes that matching corporate cultures is important in acquisitions. If the manager conducting the project has only limited knowledge of the company this could be difficult. The researcher thus hypothesises that:

5:3) The greater the number of years a manager responsible for a project has spent with a company the greater probability of an acquisition being successful.

5:4) The greater the number of years a manager responsible for a project has spent within an industry the greater number probability of an acquisition being successful.

Given the above proposal of 4 measures of managerial experience, (number of acquisition reviews, number of acquisitions completed, years at company and, years spent in industry) the researcher will now restate the hypotheses developed in section 3.3, and discussed in this chapter, to a testable form. The hypotheses, **Expertise will increase the number of information sources used and; Expertise will increase the number of people asked for information,** can now be stated in eight forms:

5:5) The greater the number of acquisitions completed by a manager the greater the number of information sources used.

5:6) The greater the number of acquisitions completed by a manager the greater the number of people asked for information.

5:7) The greater the number of acquisition reviews carried out by a manager the greater the number of information sources used.

5:8) The greater the number of acquisition reviews carried out by a manager the greater the number of people asked for information.

5:9) The greater the number of years a manager responsible for a project has spent with a company the greater the number of information sources used.

5:10) The greater the number of years a manager responsible for a project has spent with a company the greater the number of people asked for information.

5:11) The greater the number of years a manager responsible for a project has spent within an industry the greater the number of information sources used.

5:12) The greater the number of years a manager responsible for a project has spent within an industry the greater the number of people asked for information.

The above discussion and in particular Day and Lord's (1992) evidence on speed of categorisation suggests that experienced decision makers can perform more rapidly. This is supported by the work on chess (Calderwood, Klien and Crandall, 1988, Chase and Simon 1973) and implicitly by Klien's (1993) model. The researcher, therefore, proposes that as experienced decision makers can make more rapid decisions, and as time has a value, experienced decision makers will make more rapid decisions. This generates the hypothesis that, **Experience will lead to greater speed in acquisition decision making.**

The researcher, however, considers that only to use elapsed time as a measure of time fails to capture its full nature. The researcher wished to capture the balance of activity and inactivity, as the decision maker has greater influence on the active decision making time whereas the elapsed time may be set by a seller's merchant bank or the date of the next board meeting. Hickson et al (1986) examining strategic decisions used elapsed time, and a scale of the number of impediments. This researcher did not use Hickson et al 's (1986) scale because:

1) It would have required extensive time in the data collection process, which might be better used elsewhere.

2) The use of a limited item scale would limit the nature of statistical testing which could be carried out on it.

3) It fails to capture whether large numbers of people were used to bring the decision process back on schedule.

4) The researcher was interested in activity not delays, particularly as Hickson et al. (1991) found that committees do not slow decisions down in the acquisition situation. They, however, would consume the scarce resource of senior management time.

Given this wish to capture active time the researcher chose to use man weeks work involved. This measure may not be totally accurate but it should give some idea of the management resources devoted to a project. Two measures of decision making speed, elapsed time and man hours work involved will, therefore, be used.

Given that it has been proposed to measure managerial experience in 4 ways (acquisitions completed, acquisition reviews completed, time spent at a company, and time spent in an industry) this gives rise to the following hypotheses:

5:13)The greater the number of acquisitions completed by a manager the shorter the elapsed time taken.

5:14) The greater the number of acquisitions completed by a manager the fewer man hours work involved.

5:15) The greater the number of acquisition reviews carried out by a manager the shorter the elapsed time taken.

5:16) The greater the number of acquisition reviews carried out by a manager the fewer man hours work involved.

5:17) The greater the number of years a manager responsible for a project has spent with a company the shorter the elapsed time taken.

5:18) The greater the number of years a manager responsible for a project has spent with a company the fewer man hours work involved.

5:19) The greater the number of years a manager responsible for a project has spent within an industry the shorter the elapsed time taken.

5:20) The greater the number of years a manager responsible for a project has spent within an industry the fewer man hours work involved.

5.1.3 Corporate Experience

The acquisition literature is unclear whether it is company or individual experience that is relevant to acquisitions. It is though an area that has received attention. (Kitching, 1972, 1973, 1974, Lubatkin 1983, Kusewitt, 1985, Lubatkin and Shrieves 1986, Haspeslagh and Jemison 1991)

Haspeslagh and Jemison (1991:53) found that responsibility for acquisitions inevitably centred on a few people: 'Moreover, our research found that whatever the extent of experience at the broad corporate level, crucial aspects of the decision-making process devolve on individuals.' This contrasts with Lubatkin (1983: 223) who considers corporate experience to be important 'acquiring firms that pursue a strategy of higher activity in the external acquisition's market may outperform acquiring firms, that follow less active strategies.'

Kusewitt (1985:159) found that acquisition rate was negatively correlated with market return and return on investment. He concluded that (1985:166) 'The rate at which acquisitions are made through time should be sufficiently high to develop and maintain expertise but not so high that acquisitions cannot be given the attention they require for proper assimilation and integration. Such a preferred rate is relatively low, with a maximum of approximately 1 per year and probable minimum of around 1 every 4 or 5 years. Very large acquirers could probably acquire at a slightly higher rate if acquisitions are done by multiple organisational elements.' That is, he interprets his evidence to mean that there is an advantage from corporate experience but at high acquisition rates this is overshadowed by assimilation and integration problems. It therefore seems worthwhile to examine corporate experience.

The only measure used to examine personal experience, which could be applied to a company is the number of acquisitions completed. The 3 other measures of individual experience do not seem applicable to the company level. Establishing the number of acquisitions a company has ever conducted appears almost impossible. This researcher, therefore, proposes to examine the last 5 years. This should allow comparable data to be collected from databases, removing the need for the researcher to decided which acquisitions are counted.

The number of acquisitions reviewed would be difficult to estimate for companies where many people are examining acquisitions both at corporate and operating unit level. The numbers of years experience of the industry is difficult to determine. For example, if a company has taken over another company in a new area, 1 year ago, with 100 years of experience of that industry, what experience has the parent company? It could be argued that company experience of the industry has received attention in the literature as a binary variable through the related hypothesis.

Given the above, the researcher proposes the following hypotheses, referring to company experience:

5:21) The greater the number of acquisitions completed by a company the greater the probability of an acquisition being successful

5:22) The greater the number of acquisitions completed by a company the greater the number of information sources used.

5:23) The greater the number of acquisitions completed by a company the greater the number of people asked for information.

5:24) The greater the number of acquisitions completed by a company the shorter the elapsed time taken.

5:25) The greater the number of acquisitions completed by a company the fewer man hours work involved.

Given the definition of corporate experience to be used, hypothesis 5:21 resembles Kusewitt's(1985) hypothesis that, acquisition rate, defined as the mean number of acquisitions per year over a ten year period, is directly related to the post acquisition financial performance of the acquiring firm. Further to this, Kusewitt's (1985) evidence on acquisition rate and size would seem to imply that corporate management resources are also relevant. This will be examined in the next section.

This researcher, however, thinks that the company experience hypothesis should also take account of this. He, therefore, proposes to test hypotheses 5:21 to 5:25, with the variable number of acquisitions conducted over the last five years divided by current sales. This will not replicate Kusewitt's (1985) work exactly, as he used acquisition rate divided by 1976 assets compared to a market return for the whole company and return on assets. Some comparison, however, may be possible.[2] As a check on the effects of 'corporate indigestion stemming from acquisition fever', (Kusewitt,

1985:159) this researcher will also examine the maximum, minimum and range of the number of acquisitions conducted per annum in the five year period examined in comparison to success.

5.1.4 Section Summary

This section has proposed 5 measures of experience which seem relevant to acquisitions: experience of acquisition reviews, acquisitions, the industry and company by the individual and experience of acquisitions by the company. The effect of these on success, number of information sources used and speed of decision will be examined in chapter 10.

5.2 Resources Available and Used

This chapter has so far examined the experience of companies and staff involved in the acquisition decision. This final section of the literature review will address the management resources available to carry this work out.

Kitching(1972) proposes that management resources are important in the acquisition decision process. He found that the presence of managers of change (1972:44) and the availability of sufficient management resources were factors in success (1972:54), 'the sum of management skills must be greater than the joint management task.' He acknowledges the problems of lack of time and states that in the early stages of appraisal 'the greater danger at this stage is to consume too much expensive time '(1973:112) This appears to imply that a high rate of acquisition would reduce success as acquisition management resources become stretched. This factor swamping the lack of experience in companies with all but very low rates of acquisition. In Kitching's sample (1973:111) for every acquisition completed an average of 100 were screened

and that the average time cost per completed acquisition was 3000 hours (1.5 man years work).

Allen and Hodgkinson (1986A:41) support this view that an internal search for an acquisition consumes large volumes of management time, 'the research method is not just more exhaustive than the broker method, it is also more exhausting.' Haspeslagh and Jemison (1991) and Birley (1974) do not explicitly examine the issue of management resources.

The prescriptive literature is equally limited. Sandler(1988:22) states that, 'few private companies have the internal staff resources to undertake the detailed planning and searching for acquisition targets.' This could be viewed as saying the maximum acquisition rate a private company can support is zero. The same factors might affect larger companies when relatively large acquisitions are attempted or when many acquisitions are being attempted at once. It is proposed therefore that:

5:26) The greater the volume of management time devoted to a project the greater the success level.

5:27) The greater the number of people dedicated to working on acquisitions the greater the success level.

Hunt (1990:75) proposed that:' rushed acquisitions have a much greater failure rate than longer time frames.' This researcher takes this to imply that the elapsed time taken should influence the success. He, therefore, proposes that:

5:28) The greater the elapsed time spent on an acquisitions the greater the level of acquisition success.

The number of people available for acquisitions work may purely be a product of the company's total size. Hence the hypothesis.

5:29) The larger the sales of a company the more people available to work on an acquisition.

If the last hypothesis is established, it would seem worthwhile to examine the level of resources available, in terms of staff dedicated to mergers and acquisitions work, compared to the work load, and the number of acquisitions being conducted. Kitching's (1973:110-112) work suggests that the work required to conduct an acquisition is not linked to size as many tasks in the process are the same whatever the size of an acquisition. It is proposed, therefore, that:

5:30) The greater the measure, number of staff divided by the total number of transactions reported in the last five years, the greater the probability of acquisition success.

Measuring activity over the last 5 years acts as an average of the level of demands on resources. This, however, fails to take account of the peaks and troughs in work load which may stretch resources. Therefore, it is proposed that:

5:31) The greater the measure, number of staff divided by the highest number of transactions reported in any of the last five years, the greater the probability of acquisition success.

This focuses on internal resources. However Allen and Hodgkinson(1989A) see consultants as substitutes for internal management resources even if not ideal. Stallibras (1989:27) is more enthusiastic about the use of consultants, 'the role of the intermediary will prove to be important not only in the identification of targets and the execution of transactions.' Sandler (1988) is equally enthusiastic about using consultants. This is possibly because they are both consultants. The examination of the advantages of consultants is plagued by the problem that many of the writers are

consultants, and therefore their prescriptions are of dubious value. There is, however, only a limited substitute literature to base hypotheses on.

Haspeslagh and Jemison(1991) paint a gloomy picture of using consultants. They see the lack of common experience between consultants and internal managers as a problem. (1991:60)'... as a result top managers often focus their attention on more easily and quickly communicated issues that can be quantified.' A further problem they found was that the investment bankers they interviewed concentrated on issues where they could defend their position in a court. These issues were not always one's requiring attention. Haspeslagh and Jemison (1991:64) also state that, 'many outside advisers, especially investment bankers, have a major interest in consummating a deal because they are compensated on a transaction basis. Because bankers' fees do not vary dramatically whether a deal takes three weeks or nine months to close it is in their interest to conclude a deal quickly.' This seems to imply that consultants will reduce the time taken to conclude a deal and further pressure internal management resources, thus potentially reducing the possibility of success. Considering the above evidence the researcher also proposes that:

5:32) The greater the number of different consultants used the lower the success level.

5:33) The greater the number of different consultants used the shorter the elapsed time taken.

This section has found that although many consultants propose their use, evidence from other authors paints a poor picture of their use. The use of consultants, however, seems to be a potentially significant influence on the process.

5.3 Chapter Summary

This chapter has examined 2 areas: how experience and management resources may affect the acquisition process. The former included: experience of the manager of the company, industry and acquisitions, and company experience of acquisitions. The latter includes both internal management resources and consultants who can be viewed as a substitute for internal resources. As a result this review the following hypotheses were proposed:

Experience and Success

Experience of acquisitions will increase success levels.

This will be tested as:

5:1) The greater the number of acquisitions completed by a manager the greater the probability of an acquisition being successful.

5:2)The greater the number of acquisition reviews carried out by a manager the greater the probability of an acquisition being successful.

5:3) The greater the number of years a manager responsible for a project has spent with a company the greater the probability of an acquisition being successful.

5:4) The greater the number of years a manager responsible for a project has spent within an industry the greater the probability of an acquisition being successful.

Experience and Information Sources

Expert decision makers use a greater number of information sources.

Expert decision makers ask more people for information.

These can be stated in eight forms:

5:5) The greater the number of acquisitions completed by a manager the greater the number of information sources used.

5:6) The greater the number of acquisitions completed by a manager the greater the number of people asked for information.

5:7) The greater the number of acquisition reviews carried out by a manager the greater the number of information sources used.

5:8) The greater the number of acquisition reviews carried out by a manager the greater the number of people asked for information.

5:9) The greater the number of years a manager responsible for a project has spent with a company the greater the number of information sources used.

5:10) The greater the number of years a manager responsible for a project has spent with a company the greater the number of people asked for information.

5:11) The greater the number of years a manager responsible for a project has spent within an industry the greater the number of information sources used.

5:12) The greater the number of years a manager responsible for a project has spent within an industry the greater the number of people asked for information.

Experience and Time taken

Greater experience will lead to a shorter elapsed time being taken.

Greater experience will lead to fewer man hours work being required.

These will be tested as:

5:13)The greater the number of acquisitions completed by a manager the shorter the elapsed time taken.

5:14) The greater the number of acquisitions completed by a manager the fewer man hours work involved.

5:15) The greater the number of acquisition reviews carried out by a manager the shorter the elapsed time taken.

5:16) The greater the number of acquisition reviews carried out by a manager the fewer man hours work involved.

5:17) The greater the number of years a manager responsible for a project has spent with a company the shorter the elapsed time taken.

5:18) The greater the number of years a manager responsible for a project has spent with a company the fewer the man hours work involved.

5:19) The greater the number of years a manager responsible for a project has spent within an industry the shorter the elapsed time taken.

5:20) The greater the number of years a manager responsible for a project has spent within an industry the fewer man hours work involved.

Company Experience

5:21) The greater the number of acquisitions completed by a company the greater the probability of an acquisition being successful

5:22) The greater the number of acquisitions completed by a company the greater the number of information sources used.

5:23) The greater the number of acquisitions completed by a company the greater the number of people asked for information.

5:24) The greater the number of acquisitions completed by a company the shorter the elapsed time taken.

5:25) The greater the number of acquisitions completed by a company the fewer man hours work involved.

Management Resources and Success

5:26) The greater the volume of management time devoted to an acquisition the greater the success level.

5:27) The greater the number of people dedicated to working on acquisitions the greater the success level.

5:28) The greater the elapsed time on an acquisition the greater the level of acquisition success.

5:29) The larger the sales of a company the more people available to work on an acquisition.

5:30) The greater the measure, number of staff divided by the total number of transactions reported in the last five years, the greater the probability of acquisition success.

5:31) The greater the measure, number of staff divided by the highest number of transactions reported in any of the last five years, the greater the probability of acquisition success.

5:32) The greater the number of consultants used the lower the success level.

5:33) The greater the number of different consultants used the shorter the elapsed time taken.

The last 3 chapters of this thesis have proposed hypotheses to be explored The next chapter will examine how the data to do this was collected

Footnotes

[1] Material in italics added.

[2] Kusewitt's (1985) work was also on data covering the period 1967 to 1976 and American.

Chapter 6 Methodology

6.0 Introduction

This chapter will face the realities of how data was collected on what is a very sensitive issue for companies. It will present the methods used to explore the hypotheses outlined in the previous 3 chapters and how success was measured, a factor that has constrained much of the research in the acquisition area. It will focus on 2 main areas:

First, the data collection method, including how success was measured, which variables were standardised for, and the construction of the interview schedule.

Second, the sample frame including how companies were approached and tests for bias in the sample.

The first section will examine how data was collected, the primary objective of which was to obtain valid and accurate data on the substantive hypotheses. The researcher, therefore, chose to use structured interviews. The reasons for the rejection of other possible methods, published data, real time methods and questionnaires, are given below starting with published data as a data source.

6.1 Data Collection Methods

Published Data

Published data was rejected as the main data source as the information to examine the hypotheses developed in the previous 3 chapters was not available. Published data was used for establishing the sample frame, total company sales and the number of

acquisitions completed by a company over the last 5 years. Total sales were taken from the 'One-source' database. The number of acquisitions completed by a company was taken from Extel. This database may exclude some small acquisitions. It, however, provided an external standard on the inclusion of acquisitions.

6.2 Real Time Methods

Real time methods, as proposed by Van de Ven (1992), were rejected for this research because:

A) It would have only produced a few cases. Testing many of the hypotheses proposed in chapters 3, 4 and 5 would therefore be impossible. Only 1 year was available for fieldwork and in Hickson et al 's (1986:143) sample, boundary decisions, which included acquisitions, took from 2 to 18 months. Even if all acquisitions observed took 2 months and were completed, which is unlikely, (Kitching 1973:110) this would produce a sample of 6.

B) Access problems. Companies were unlikely to allow the researcher access to price sensitive information during the analysis and negotiation phases.

C) It would be difficult to determine success close to the completion of an acquisition.

The researcher, therefore, rejected this method.

6.3 Questionnaire

A large scale questionnaire approach offered a number of advantages for this research. It would have allowed rapid data collection, and would not have placed a geographic limit on the sample frame.

It was rejected for this research for the following reasons:

a) The researcher would have no control over who completes the questionnaire. Thus whether the respondents have a detailed knowledge of the acquisition process is unclear

b) A questionnaire involves less commitment to answering questions than an interview, thus reducing the value of individual answers (Birley, 1974:26)

c) Senior managers may be unwilling to answer questions about acquisitions without meeting the person conducting the analysis and establishing the degree to which answers would be treated as confidential. (Birley, 1974:26)

d) All questions must apply in all cases (Mallory, 1987:95). Thus categories in closed questions would have to be very clear cut, so only 1 interpretation can be made. This reduces the detail that can be expected from such questions. It would also be difficult to clarify questions if a company operates in an unusual way.

e) It is ill-suited to exploring areas where detailed hypotheses do not exist as interesting idiosyncrasies cannot be followed up.

f) Few executives would fill in a questionnaire large enough to answer the hypotheses posed in chapters 3, 4 and 5. (c.f. Mallory, 1987:92)

g) Datta and Grant(1990) reported a response rate of 27 per cent. If this were replicated in this study it would have produced approximately 80 responses if all United Kingdom companies with sales over 200 million pounds which had completed any acquisition between January 1990 and December 1993 were mailed.[1]

This method was, therefore, rejected. The researcher thus decided to conduct personal interviews with companies that agreed to participate.

6.4 Interviews

Having chosen interviews as the primary data collection method this left 3 main questions concerning data collection: how to structure the interviews, how many

interviews, and with whom. This section and the following 3 sections will examine how the interviews were structured and the questions asked.

6.4.1 Interview Structure

An unstructured approach to interviewing was rejected as examining the specific hypotheses developed in the previous 3 chapters from descriptions might be difficult. Unstructured interviews would have reduced the sample size for each question and introduced unnecessary researcher bias in interpreting and categorising data. Thus the researcher chose to use a structured interview schedule.

6.4.2 Number of Interviews at a Company

Having determined that structured interviews were to be used as the data collection method, the researcher decided to aim at only 1 interview at each company. The reason for this was that gaining access to individuals responsible for acquisitions would be difficult, and that requesting multiple interviews might exacerbate this. In many cases, very few people were involved in the pre-decision process, Board involvement only occurring at the decision point. Offers of further interviews at a company were not, however, declined. This resulted in 2 interviews at 2 companies and 3 at 1, all with different people.

The next 2 sections of this chapter, sections 6.5, and 6.6, will explain how the interview schedule was developed. The first of these sections, will examine how success was measured. Section 6.6 will then explain how the interview schedule was constructed. Thus the researcher will now explain how this research measured success, and why this method was chosen.

6.5 Measuring Success

The measurement of acquisition success has many difficulties. The most common method of measurement has been to compare aggregate returns to the equity holders of the bidding companies, to a model of normal performance, often the Capital Asset Pricing Model, the difference in aggregate performance being attributed to the acquisition.

Singh and Montgomery (1987:380-382) is typical of many finance based studies on acquisitions. They used the period 800 to 551 days before the acquisition to determine the normal return. This data was aggregated to a portfolio and the residuals from the normal return for the portfolio plotted for the period 50 days before to 100 days after the acquisition to establish if any abnormal return existed. This method has several disadvantages:

First, it requires that no major events specific to the share occurs in the period used to develop the normal return. This is unlikely for active acquirers. It is these companies though which are most interesting to this research, as they will have had greater experience of acquisitions to learn from.

Second, it assumes the event was of sufficient size to alter the share price to a measurable degree. This limits the sample to acquisitions that are relatively large compared to the acquirer. It was shown in chapter 2 that those studies that have not used an event study based method have found poor performance in very small acquisitions, (Kitching 1972 reprint of 1967 article, 1973, 1974, Kusewitt 1985) while those that have used an event study method have not. (Franks, Harris and Titman 1991, Agrawal, Jaffe and Mandelker 1992, and Loderer and Martin 1992)

Third, it assumes the market has not already discounted the benefits of future acquisitions into a company's share price. The discounting of acquisition returns before the acquisition has been considered is likely to be related to a high level of acquisition experience and prior success. Hence experienced acquirers may show lower returns at the event point as the capital markets may have already discounted returns from the acquisition based on the expectation that the company would acquire and acquire successfully. Thus this method may systematically understate returns to extensive acquirers such as Hanson, who have based their earnings' growth on acquisitions.

Fourth, 'Bidders may time take-overs to coincide with favourable performance by their own stock' Franks and Harris (1989:247). Thus, post-merger performance will appear to be worse than it actually is because the normal returns are based on a period of abnormal returns.

Two other more general criticisms of the type of work have been raised. First, the validity of CAPM as a model to generate normal returns have been questioned. Halpern states (1983:302) 'using an equilibrium constrained version of CAPM (The Capital Asset Pricing Model) relies on the assumption that CAPM (in one of its versions) is the correct process to explain the underlying distribution of returns over the event period.' Second, Ravenscraft and Scherer (1987:221) challenge the validity of all market based measures stating ' the market was demonstrably and massively wrong in its enthusiastic reaction to conglomerate mergers at the peak of sixties' activity' and they continue, 'at the very least, the experience from times past advises caution in using event study findings as an intellectual foundation for generalised merger policy.' Franks, Harris and Titman (1991:86) in response to some of the criticisms, used 4 benchmarks, because' A potential problem with this methodology was pointed out by Roll (1978) who argued that estimates of abnormal performance

can be sensitive to the choice of the benchmark, and that estimates generated with inefficient benchmarks are generally not meaningful.' This implies earlier studies may be suspect because the portfolios they use generate abnormal returns that are related to size and dividend policy,' thus they (*previous studies*) are likely to generate negative performance for larger than average acquiring firms even if performance is favourable'[2](Franks Harris and Titman 1991:86). To resolve this problem they used an 8 portfolio benchmark that corrected for the above errors, as well as a ten factor benchmark, an equally weighted and value weighted index, covering the 36 months beginning the month after the acquisition. Even this does not correct for errors resulting from returns of extensive acquirers where future unknown acquisitions are already being discounted into the share price and for problems of small acquisitions and multiple events. The event study method was, therefore, rejected as a success measure because of the 6 problems listed above.

Other market based measures suffer from many of the problems of the event method that compare returns to normal returns. Morck, Sheifer and Vishny (1990) base their success measure on changes in market capitalisation around the bid point. They compared the capitalisation 2 days before the first bid announcement in the Wall Street Journal to the capitalisation on the first trading day after the acquisition. To overcome problems of relative size they compared the value of the bid to the change in market capitalisation of the acquirer. Thus a company that acquires a company for 400 and loses 100 in equity value results in a measure of - 25%. This method fails to overcome problems of noise, where changes resulting from small acquisitions are not discernible from ordinary market variations in share prices. Second, it assumes all change in capitalisation occurs in the short period covered, thus only covering benefits immediately visible but not already discounted into the price. Thus adapted market based methods were rejected as a success measure.

Published accounts based measures according to Datta (1991), 'are typically available in aggregate form and isolating the performance of the acquisition after controlling for the performance of other units and impact of other events is difficult, if not impossible.' Other problems with published accounts based measures are:

a) Standardising accounting practices.

b) Scale problems. Small acquisitions will make very little difference to a quoted company.

c) Data may be difficult to obtain for private companies and purchases of part of companies.

Mason, Stark and Thomas(1994), however, used published accounts based measures. To overcome the problems listed above, they:

1) Excluded all transactions where only part of a company was purchased.

2) To maintain standard accounting practises all acquirers and acquirees had to be British companies.

3) 'The acquirer did not take part in any other significant activity in the period prior to, or following the take-over' Mason, Stark and Thomas (1994:11). This reduced their sample by 31, from 97 to 66.

4) Data had to be available on Datastream. This removed a further 28 from their sample.

These decisions to avoid the problems of standardisation, and data availability reduce the sample size markedly. Given the problems of access this researcher thought that reducing the number of companies that could be targeted may have prevented valid statistics on other variables being carried out.

Using a measure similar to Mason, Stark and Thomas (1994) would have also removed the possibility of the company maintaining anonymity of the acquisition and the interviewee's freedom to talk about any acquisition of their choice.

Kusewitt's(1985) use of total accounting return on assets, similarly had a number of problems.

1) This assumes any acquisition program is sufficiently large to have an effect on overall organisation performance. To allow for this, Kusewitt (1985) used companies which had made 2 or more acquisitions which involved assets over 10 million dollars. This resulted in a sample frame of 155 for the period 1965 to 1975. If Datta and Grant's(1991) response rate were replicated this would have resulted in about 42 responses, when investigating a 10 year period of intensive activity.

2) It attributes changes in performance to acquisitions and not other events.

This method was hence rejected. Methods using management accounts were rejected because access was unlikely. Thus no finance or accounting method appeared to be appropriate.

Porter (1987) used subsequent divestment as a measure of failure. The problem with this is that it requires a long time gap between the date the research is carried out and point when the acquisition was carried out for it to be a valid measure. Porter(1987) examined acquisitions made between 1950 and 1975, and 1950 and 1980 which had been divested by 1987. That is the acquisitions included in the first failure measure were at least 12 years old, when it was constructed and in the second measure they were at least 7 years old. A time gap of 7 years, however, would reduce the value of other information collected as it is based on the memories of those involved. Second, this measure fails to distinguish between a profitable intended exit, a fire sale because other operations within the buyer are performing badly, and a divestment at a loss.

This method was therefore rejected for the purposes of this research. It would, however, be an interesting measure to use on the data in 4 to 5 years time.

Strategic management research has used a variety of methods for determining organisation success. Dess (1987) lists methods used to measure success. These include: profitability, return on net assets, long term profitability and Bourgeois's (1980) factor index based on 5 year growth in return on total assets, capital net assets, EPS, and return on sales. These instruments measure total performance. Determining an acquisition's contribution to these measures is likely to be difficult and subjective. Thus no objective measure appeared valid for this work given the sample size involved and that many acquisitions will have small effects on overall organisation performance variables. This leaves measures based on subjective opinions of either managers or external analysts with a knowledge of the acquisition.

The use of external analysts has the advantage of not being tied to the management who may have a vested interest in the acquisition being successful. Bruton, Oviatt and White (1994) used a panel of 3 members of staff from 3 universities who based their view on company accounts press releases and stock brokers reports. The use of an external panel to judge success has 2 disadvantages:

1) It requires a group of people with sufficient knowledge of the acquisitions and performance since the event. Access to such a group was likely to be difficult. The researcher considered the cost of obtaining such a group of people to make a judgement on acquisition success would be beyond this research.

2) It is still subjective even if there is less reason for an expert group to have any systematic bias.

This left the use of subjective measures based on the management of the acquiring companies opinion's. In his seminal article on the acquisition process, Kitching (1972[3]) used this method. Exact details of his method, however, were not given. Respondents though were asked questions about performance post acquisition compared to expectations.

Birley (1974), in order to measure acquisition success, asked 'Do you feel that the acquisition was successful?' This was followed this up with 'give reasons' (Birley 1974:45). She found executives agreed on success but not on the degree or criteria. This suggests it may be better to impose a frame of variables on which success can be judged. This allows the researcher to know the frame within which success is being considered. It however, imposes a frame that may not match that of the respondents, hence reducing the validity of the results.

Dess and Robinson's (1984) review of performance measures in the absence of objective measures, highlights 3 major approaches to conceptualise organisation performance: a) The goal approach. This seeks to define performance in terms of an organisation's goals either implicit or explicit; (Etzioni 1964)

b) The systems resource approach, this sees performance in terms of what the organisation needs to survive;

c) The constituency approach, this views an organisation's performance in terms of fulfilling constituent needs.

The framework chosen, however, does not eliminate the problem that organisation performance is multifaceted. Thus there is a need to use multiple measures. To examine the value of subjective measures they compared them to objective self reported measures. The measures they (Dess and Robinson, 1984:268) used were

return on assets, overall performance, and total company sales. The respondents were asked to rate performance for each variable on a scale from 1 to 5, 1 being in the lowest 20 per cent in the industry for that variable, to 5 in the top 20 per cent. The study concludes that 'these subjective perceptions of relative improvement were strongly correlated with objective measures of the absolute changes in return on assets and sales over the same period.' (Dess and Robinson 1984:271) They also found a high degree of correlation between the measures and thus they suggest subjective measures may be a method of operationalising the wider non-economic elements of organisation performance.

This implies that subjective measures are a valid measure of organisation performance but not a substitute for economic measures if they are available. The method outlined by Dess and Robinson (1984) has been used by Smith, Guthrie and Chen (1989) to examine performance of Miles and Snow's(1978) strategic types. They found it to be reliable.

A similar approach to Dess and Robinson (1984) was taken by Datta and Grant (1990) and Datta (1991) examining acquisition success. They asked respondents to assess success or failure on a 5 point scale for 5 variables, ROI, EPS, stock price, cash flow, and sales growth and to assign weights to each variable. These weights were then used to construct an index of acquisition success. They also asked respondents to assess overall success and found a high correlation between the 2 measures. This measure has 2 main disadvantages: first, it is subjective and, second, it is carried out by those with a vested interest in the outcome. It does, however, have several advantages over other measures. Those making the assessment are fully informed and neither take into account exogenous variables nor exclude returns because acquisitions are part of the normal management process. There are also no scale problems. This method thus

appears the best suited to this research. However, it does have a few faults. It excludes no acquisition from the sample because its effects are too small to be detected or because the company has acquired too often.

To generate some variation in success levels, a success measure needed to be near the beginning of the section asking about a case in the questionnaire. Datta and Grant's (1990) 5 item method appears to be too cumbersome for this. Its length at the start of an interview may seem over aggressive, reducing the openness of later responses. Thus a more basic tool is required. Given Birley's (1974) approach, the section of the interview schedule on a specific case, began by asking: 'How successful would you describe the process of reviewing this company as an acquisition target ?' This was used to attempt to generate less successful cases where an interviewee had been involved in a number of acquisitions. This did not prove effective. It generated only 1 additional case of a poorly performing acquisition. This may have been because the interviewer was reticent to ask the interviewee to change cases, often because by the point in the interview that the question was asked, interviews looked like they would over run the time available.

This left the problem that the proposed main success measure would impose a frame of reference. Avoiding this by only using a success measure based on the respondents frame of reference would reduce the value of any measure constructed since each result would be based upon different variables. To avoid these problems the researcher used 2 main success measures. The first was based on the respondent's reference frame using the following series of questions.

What criteria were used to examine this acquisition?

Which of these criteria were the 3 most important?

Could you assign weights out of 10 to each criterion based on how important you think they were?

Could you rate on a scale from 1 to 5 how the acquisition has performed on these criteria? (1 being very poor)

This follows a similar method and form to the measure proposed by Datta and Grant (1990) but without imposing a reference frame. Second, it fits neatly into an interview schedule because asking about the main criteria for a decision is central to this research. It also adds an idea of how important the respondent viewed the 3 key criteria and acts as a check, on the other success measures.

The final question in both sections of the questionnaire was the success measure method proposed by Datta and Grant (1990). This gave 2 results; one referring to the overall success of acquisitions for the company, and the other to the specific case explored in the interview. The success measure based on Datta and Grant(1990) was implemented by asking the interviewee to fill in the form presented in figure 6.1.

The analysis of the results for the 2 types of scale was carried out in the same way as Datta and Grant (1990). That is, for each variable the scale value was multiplied by the weight. These were summed and divided by the sum of the weights, giving a weighted average.

6.5.1 Section Summary

This section has explained why 2 subjective measures based on specific variables, 1 subjective scale based on the respondent's reference frame and a simple question about success, were used in this research to measure success. The next section of this chapter will now explain how the data collection instrument was constructed.

Figure 6.1 **Main Success Measure**

Could you please fill in the following two questions

A) Could you rate the performance of the acquisition for the following variables? (1 being very poor performance)

Return on Investment	1	2	3	4	5	Don't know	
Effect on Earnings per share	1	2	3	4	5	Negligible	Don't Know
Effect on group Share Price	1	2	3	4	5	Negligible	Don't Know
Cash Flow	1	2	3	4	5	Don't Know	
Sales Growth	1	2	3	4	5	Don't Know	

B) Could you assign a number out of 10 for each factor based on how important you think each is in determining the success of the acquisition?

Return on Investment	1	2	3	4	5	6	7	8	9	10
Effect on Earnings per Share	1	2	3	4	5	6	7	8	9	10
Effect on group Share Price	1	2	3	4	5	6	7	8	9	10
Cash Flow	1	2	3	4	5	6	7	8	9	10
Sales Growth	1	2	3	4	5	6	7	8	9	10

6.6 Interview Schedule Construction

The main objective of the interview schedule design was to obtain the data required to examine the hypotheses proposed in chapters 3, 4 and 5. The main considerations were length, it was unlikely that the researcher would be able to get over 1.5 hours of an executive's time, and sensitivity, some questions were unlikely to be answered and obtaining access to the individuals responsible would be difficult.

Given this the researcher aimed at only 1 interview at each company. Requesting more than 1 interview with a person would probably have exacerbated the access problem. The researcher however, followed up suggestions by interviewees to interview someone else at an organisation about another acquisition. This resulted in 2 interviews at 2 companies and 3 at another.

The interview schedule was structured to follow the chronological order of events in an acquisition. It started with closed questions covering less sensitive issues. For simplicity the questionnaire was divided into 2 with questions concerning general practice and behaviour, first, followed by a section asking about a specific case. The researcher used a variety of books on interviewing and questionnaire construction to modify questions (Moser and Kalton, 1978, Belson and Duncan 1976, Boyd and Westfall 1978, Bryman 1988). Individual questions were piloted on other doctoral students for clarity. A complete schedule was given for review to 2 individuals with experience of the acquisition area, after which minor modifications were made. This resulted in the schedule in Appendix A.

This chapter has, so far, discussed how the data collection instrument was constructed and how it was used. It will now examine on whom it was used.

6.7 Sample Frame

The main limiting factor on the sample frame in this research was access. Interviews could only be conducted in the United Kingdom. Therefore, the decision to acquire must have been made in the United Kingdom. Hence only 4 foreign companies with decision making centres within the United Kingdom could be approached.

To gain valid information the companies must have made an acquisition in the last few years, but not so recently that the buyer has no experience of operating the acquisition and cannot assess how successful it has been. The researcher, therefore, chose to limit the sample frame to companies that had according to Extel[4] made an acquisition between January 1990 and December 1993. The interviews were conducted between April 1994 and January 1995.

A size limit was placed on the sample to increase homogeneity of the sample frame. A threshold of sales of £ 200 million pounds was chosen. Market capitalisation was not used because of potential rapid changes in market capitalisation and it would have been more difficult to obtain in some cases.

The aim of the size limit was to the reduce the variance caused by markedly different organisation and size structures. It effectively excludes shell companies, investment vehicles, oil exploration companies with 1 or 2 employees, all but the largest private companies and with a few exceptions companies dominated by 1 shareholder or family.

The sample frame thus consisted of United Kingdom companies with sales over £ 200 million, according to FAME, which had, according to Extel, made an acquisition between January 1990 and December 1993. To this, 7 companies were added because access was available. These consisted of 4 foreign food companies which had decision making centres in the United Kingdom and where the researcher expected to gain access. All 4 of these were interviewed.

During interviewing several people were suggested that I might contact. These included 3 people at companies which had sales below £ 200 million. These were approached and 1 was interviewed.

Thus the sample frame consisted of 272 companies who had made an acquisition between January 1990 and December 1993 and were British or were known to have a large decision making office in the United Kingdom.

This section has explained how the sample frame was constructed. The next section will discuss how the companies were approached.

6.8 Approach To Companies

The first stage in approaching companies was to obtain addresses. The addresses of the companies in the sample frame were obtained from the FAME database. Names of people responsible for acquisitions were obtained from published sources including Acquisitions Monthly, contacts, conference attendance lists, and merchant banks. If no name was available, company switchboards were rung to confirm the name of the finance director.

The method of approach to companies was to write a letter[5] on business school headed paper to the individual identified at the company stating,

a) The objective of the research

b) Who was conducting the research and the institution involved.

c) That they would receive a copy of the findings.

d) The letter concluded: *May I phone you in the next few days in order to answer any queries you have and fix an appointment in the next few months.*

With this was included a letter of support from Professor Gray, shown in appendix C. Suggestions to use postscripts and include hand corrections of mistakes were ignored. (Mallory, 1987:97)

Each letter was followed up between 3 days and a week later with a phone call. This often took several attempts to get through to the targeted person. This process resulted in 4 responses, yes, no, that the letter had been passed on, or that I should write to someone else within the company. The first response resulted in an interview date being arranged and the latter 2 responses were followed up.

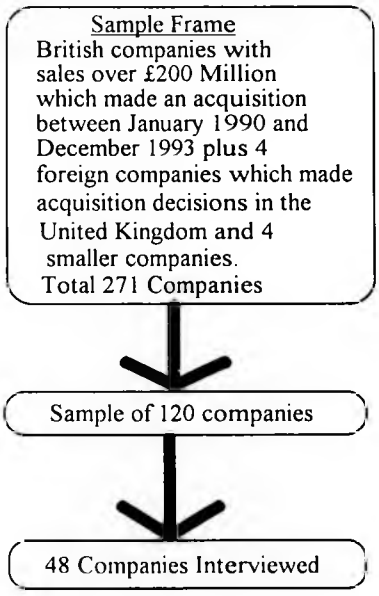
The letters were sent out in batches of between 10 and 20 at regular intervals over the period April 1994 to January 1995, by which point agreement to conduct 52 interviews had been obtained. Interviews took place over the same period.

This section has explained how companies were approached, the next section will discuss selection bias introduced because of differences between those who were to be interviewed, those who declined to be interviewed and those who were not asked.

6.9 Tests for Bias

The choice of companies and how companies in the sample frame were approached inevitably introduced bias in the final sample. The selection of the sample resulted from 2 stages, first out of the universe given, the selection of companies from whom interviews were requested, second, the response of the company, whether they were willing to be interviewed. This is illustrated in figure 6 2.

Figure 6.2 **Sample Selection**



The companies were approached in the order they appeared on the list produced by the database. Thus the 120 companies approached were the first 112 companies listed by the database which had made an acquisition between January 1990 and December 1993, plus the 4 smaller companies and 4 foreign companies suggested by other

interviewees. The list produced by the database did not seem to be by sales or industry.

The sample consisted of 51 acquisitions at 47 companies and 1 interview covering a programme of divestments. Four of these companies were foreign owned.

Three areas were examined to check for bias in the sample:

a) Total sales over the last 3 years

b) Profits before tax for the last 3 years

c) 2 digit Standard Industry Codes

Data was taken from the One-source database. Where data on sales and profit figures for a company was missing, it was taken from company accounts. Companies for which no 2-digit SIC code was listed were excluded from that analysis to maintain consistency.

The last 3 sets of sales and pre-tax profit figures, available from the One-source database in January 1996[6] were used to reduce effects of extraordinary items in the accounts.

The next section will conduct a comparison of sales and pre-tax profits between the companies asked for interviews to those not asked for an interview. The section following that will compare the total sample frame to those asked for interviews on the 2-digit SIC code.

6.10 Comparison of Profits and Sales of Those Companies Asked For Interviews and Those Not Asked for An Interview

Analysis of variance and means tests were conducted on the sales and pre-tax profit figures to compare those asked for an interview and those not. The results of these tests are shown in Appendix B, tables B.1 to B.6. These show that the companies who were asked for an interview had larger sales and pre-tax profits for their last 3 sets of accounts compared to those not asked.

The few very large companies in the sample frame, however, exerted a significant influence on these results. To examine the effect on the tests of means and variances of these very large companies, the tests were repeated with the company with the largest sales in the sample frame removed as shown in Appendix B, Tables B.7 to B.12 and with the 2 largest companies, removed in Tables B.13 to B.18. Both these companies had sales of over 3.5 standard deviations above the mean for their last set of accounts. The very long tail of the distribution is also illustrated by the standard deviation of the sales, which is approximately 2.4 times the mean for the 3 years examined.

The statistics, in appendix B, show that with the largest 2 companies removed those asked for interviews and those not have approximately the same mean sales, with mean sales of those not asked marginally larger in the penultimate and anti-penultimate sets of figures (£50.408 million = 2.5 per cent and £.76 million = 4 per cent). The standard deviation is still over 1.5 times the mean indicating a skewed distribution.

The T-tests on pre-tax profits show that the 2 sets of companies have statistically similar profits for the last set of accounts but that those asked for interview had larger pre-tax profits in the previous 2 years. It is proposed therefore that although the mean sales and profits of those companies asked for interview is significantly larger than those not asked for an interview this is a product of the inclusion of 2 very large companies in the group asked for interviews. When these companies are removed the mean sales and profits for the last 3 sets of accounts are similar.

The SIC codes of those asked for interviews and the sample frame as a whole will now be compared.

6.11 Comparison of 2-Digit Standard Industry Codes Between Sample Frame and Those Asked For Interviews

The 4 charts presented below (figure 6.3 to figure 6.6) compare the percentage of those asked for an interview in an industry to the percentage in the sample frame. A visual presentation is used as the large numbers of categories in comparison to the number of data items render Chi-squared tests on this data invalid. The key facts it illustrates are:

a) The extraction of mineral oil and natural gas sector, mineral oil processing sector, processing of rubber and plastics sector, manufacture of motor vehicles and parts sector, and food, drink and tobacco sectors are markedly over represented in the companies asked for interview.

b) The retail distribution sectors, financial services sectors and business distribution sectors are markedly under represented.

In summary, the companies asked for interview includes a disproportionate number of manufacturing companies and a disproportionately small number of service companies.

The last 2 sections have compared the group of companies asked for interviews to those not asked for interviews with regard to sales and profits for the last 3 availble sets of accounts, and compared those companies asked for interviews to the total sample frame on an industry basis. It concluded that those asked for interviews were larger than those not asked, but that this was a product of the 2 largest companies being asked for interviews. When these companies were removed the mean size of the companies asked for an interview was approximately the same as those not. The comparison of SIC codes shows that those asked for interviews are not typical and include a disproportionate number of manufacturing companies.

The next section will conduct a comparison of those interviewed to those not interviewed on sales, pre-tax profits and industry.

6.12 Comparison of Profits and Sales of Those Companies Interviewed and Those Not Interviewed

This section will compare the variance and means of the sales and pre-tax profit figures between those interviewed and those not. The results of the comparison between those interviewed and those not, are shown in tables B.19 to B.24 in appendix B. These tables show that the companies who were interviewed had larger sales and pre-tax profits, for their last 3 sets of accounts, than those that were not interviewed

This comparison was also subject to significant influence by a few very large companies in the sample frame. To examine the effect on the tests of means and variances of these very large companies, the tests were repeated with the company

with the largest sales and pre-tax profits in the sample frame removed, as shown in Tables B 25 to B 31 in appendix B, and the largest 2 companies removed, as shown in Tables B 32 to B 37 in appendix B. The results of these tests (Tables B 25 to B 37) show that the mean sales and pre-tax profits of the companies interviewed were larger than that of the companies who were not interviewed (either not asked for an interview or declined to be interviewed). The researcher will now compare the 2-digit Standard Industry Codes of those interviewed with the whole sample frame.

6.13 Comparison of 2-Digit Standard Industry Codes Between Sample Frame and Those Interviewed

The 4 charts presented below (figure 6.7 to 6.10) compare the percentage of those interviewed in an industry to the percentage in the sample frame as a whole.
The key facts they illustrate are:

a) The mineral oil, manufactures of metal goods, manufacture of motor vehicles and parts, food drink and tobacco, processing of rubber and plastics and other transport sectors are over-represented in the sample.

b) The production and distribution of electricity, gas and other, water supply, metal manufacture, electric and electronic engineering, construction, wholesale distribution, retail distribution, banking and insurance are sectors under-represented.

These categories are, however, analysed by the primary industry a company operates in. Five companies that are categorised as being in the building materials sector by the stock exchange were interviewed, their 2-digit SIC sectors are: production of rubber

and plastics, timber and wood furniture production, extraction of mineral products and for 2 companies, manufacture of non-metal mineral products.

A problem that affects this analysis is the small size of the sample. Those categories with only 1 company in are either under represented or over represented if the company was interviewed, as 1 company is approximately 2 per cent of the companies interviewed.

In summary, those companies that were interviewed included a disproportionately large number of manufacturing companies, and a disproportionately small number of electricity, water companies and financial service sector companies.

The researcher, therefore, concluded that the comparison between companies asked for interviews and those not asked, shows the companies have similar mean sales and profits when the 2 outliers are removed. The group asked for interviews includes an over-representation of manufacturing companies and an under-representation of utilities and service sector companies.

The average sales and profits of the group of companies interviewed is larger than those not interviewed. This group also contains a disproportionately large number of manufacturing companies and a disproportionately small number of service companies and utilities when compared to the whole sample frame. The sample may therefore be taken as typical of large British based manufacturing companies

6.14 Chapter Summary

This chapter has explained the methodology to be used in this research. It has presented the success methods used, 2 subjective itemised scales with known reference

frames, 1 subjective itemised scale using the respondent's reference frame, and 1 simple question. It has also explained why interviews were used, and how the sample was constructed. It has concluded that the companies interviewed are not typical of the sample frame but are on average larger, and include a disproportionate number of manufacturing companies. This thesis so far has explained why the researcher thought the problem to be examined was important, developed a series of hypotheses and explained how these are to be investigated. The next 4 chapters will test the hypotheses developed in chapters 2 to 5. This will begin in the next chapter which will explore the data on the information collection and search process.

Footnotes

[1] The reasons for the narrow sample period are given in section 6.7.

[2] Italics added

[3] Reprint of article in Harvard Business Review, November-December 1967.

[4] Extel includes all acquisitions by companies quoted on the International Stock Exchange (London Stock Exchange) and stock exchanges in the United Kingdom and Ireland including the Unlisted Securities Market and Third Markets. The number of acquisitions conducted by a company was taken from the database in April 1995. The 5 accounting years used were therefore either 1990 to 1994 or 1989 to 1993. For the 4 foreign companies this data was taken from the last 5 sets of accounts available in English at that point in time.

[5] For a copy of the letter see appendix C.

[6] The last update before this was December 1995.

Figure 6.3

Percentage of Those Asked For Interviews in An Industry Compared to Percentage in That Industry in the Sample Frame - Part 1

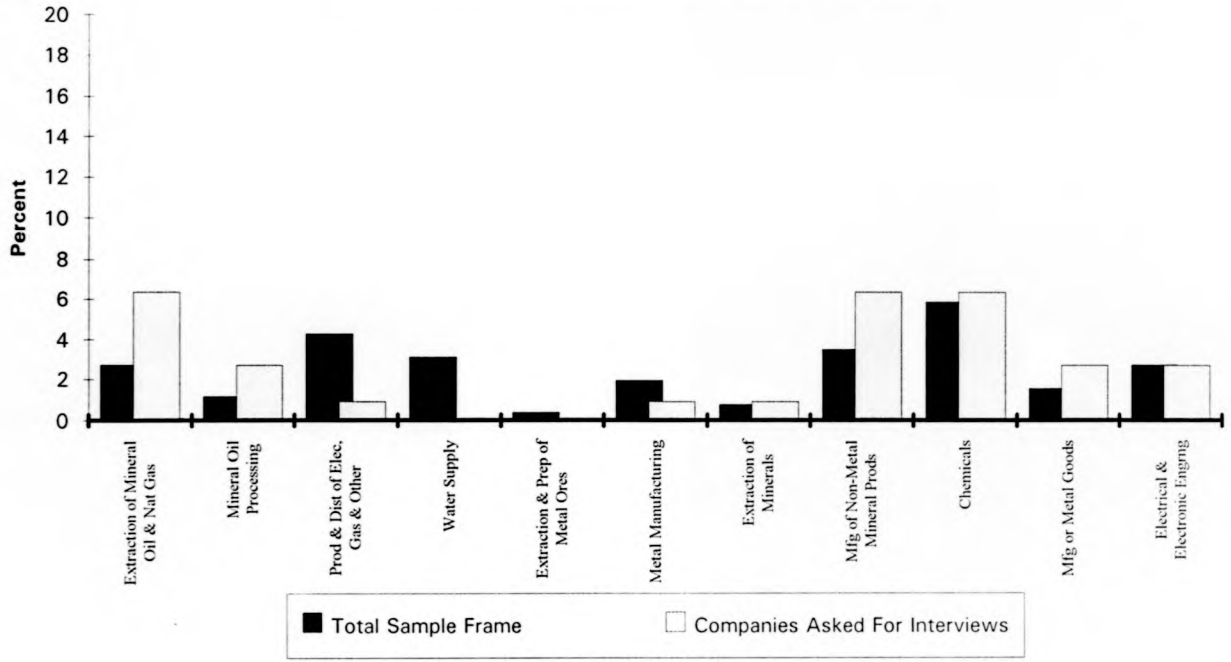


Figure 6.4 **Percentage of Those Asked For Interviews in An Industry Compared to Percentage in That Industry in the Sample Frame - Part 2**

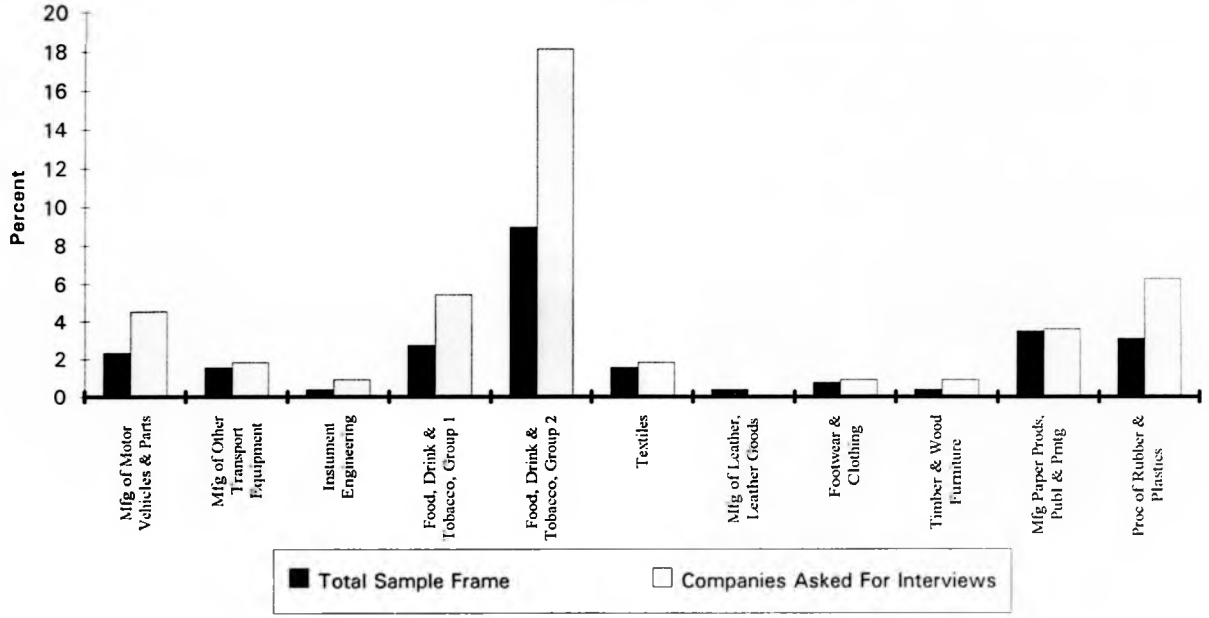


Figure 6.5

Percentage of Those Asked For Interviews in An Industry Compared to Percentage in That Industry in the Sample Frame - Part 3

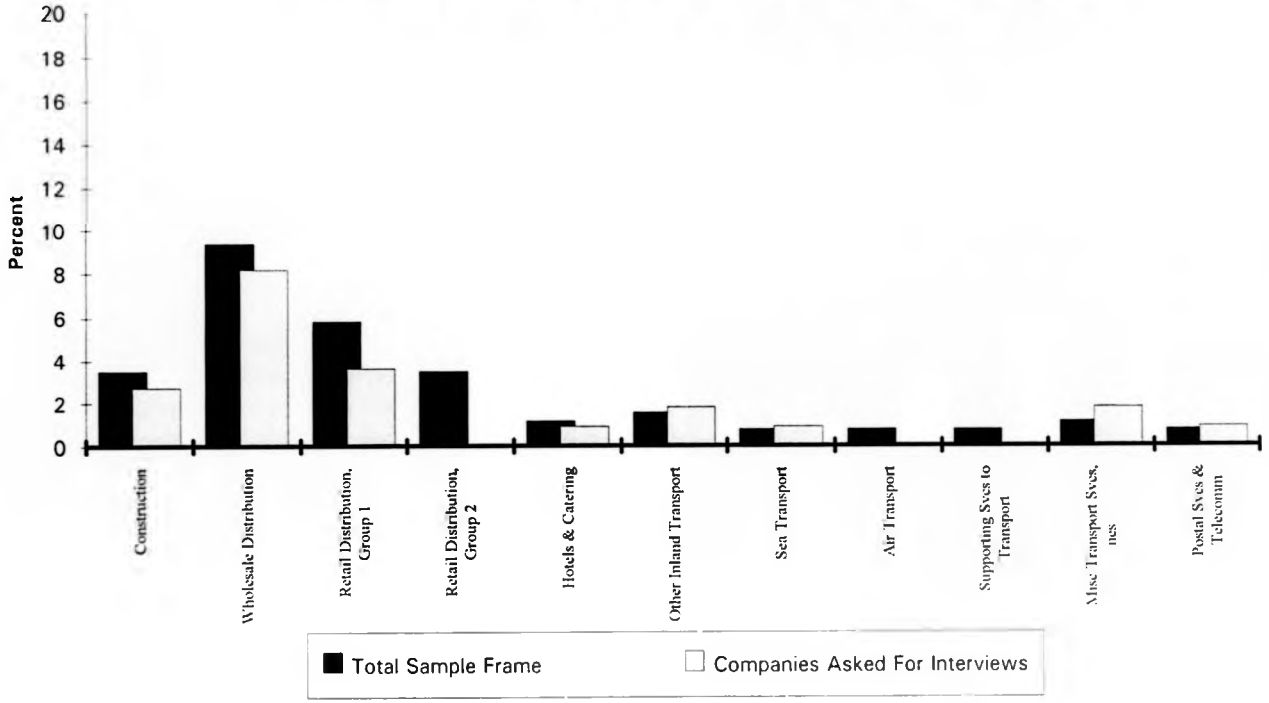


Figure 6.6

Percentage of Those Asked For Interviews in An Industry Compared to Percentage in That Industry in the Sample Frame - Part 4

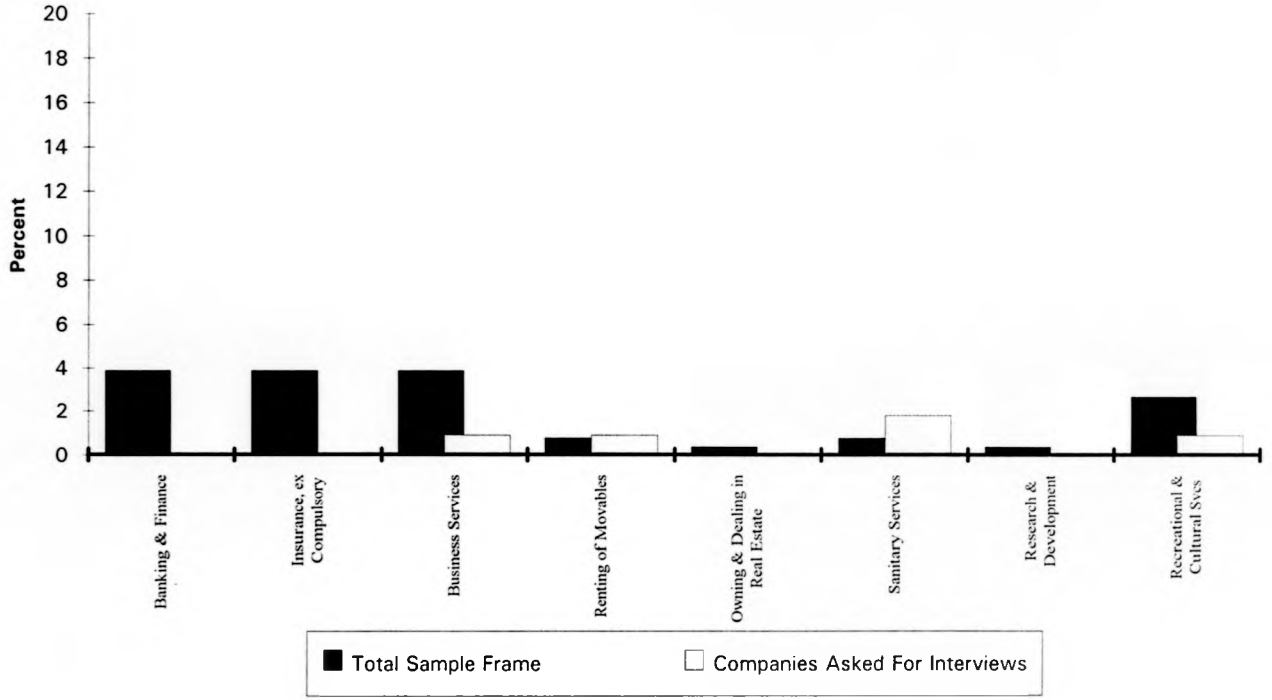


Figure 6.7

Percentage of Those Interviewed in an Industry Compared to Percentage in That Industry in The Sample Frame - Part 1

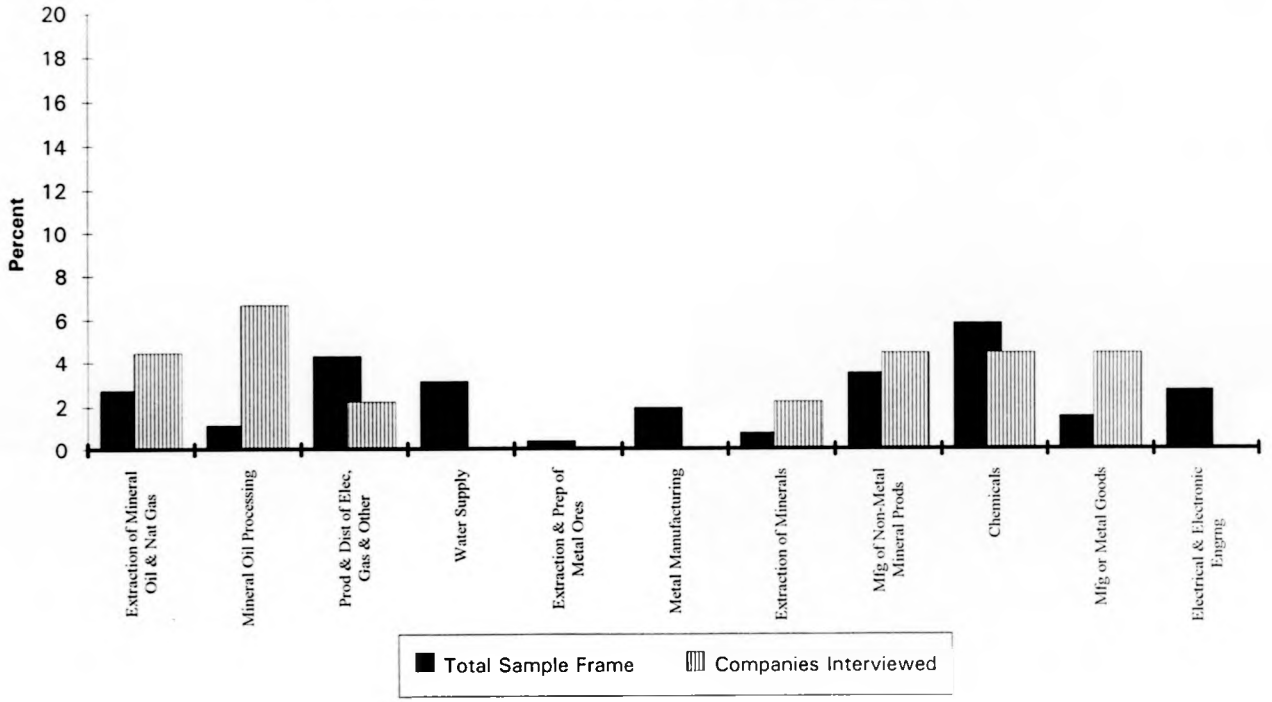


Figure 6.8

Percentage of Those Interviewed in an Industry Compared to Percentage in That Industry in The Sample Frame - Part 2

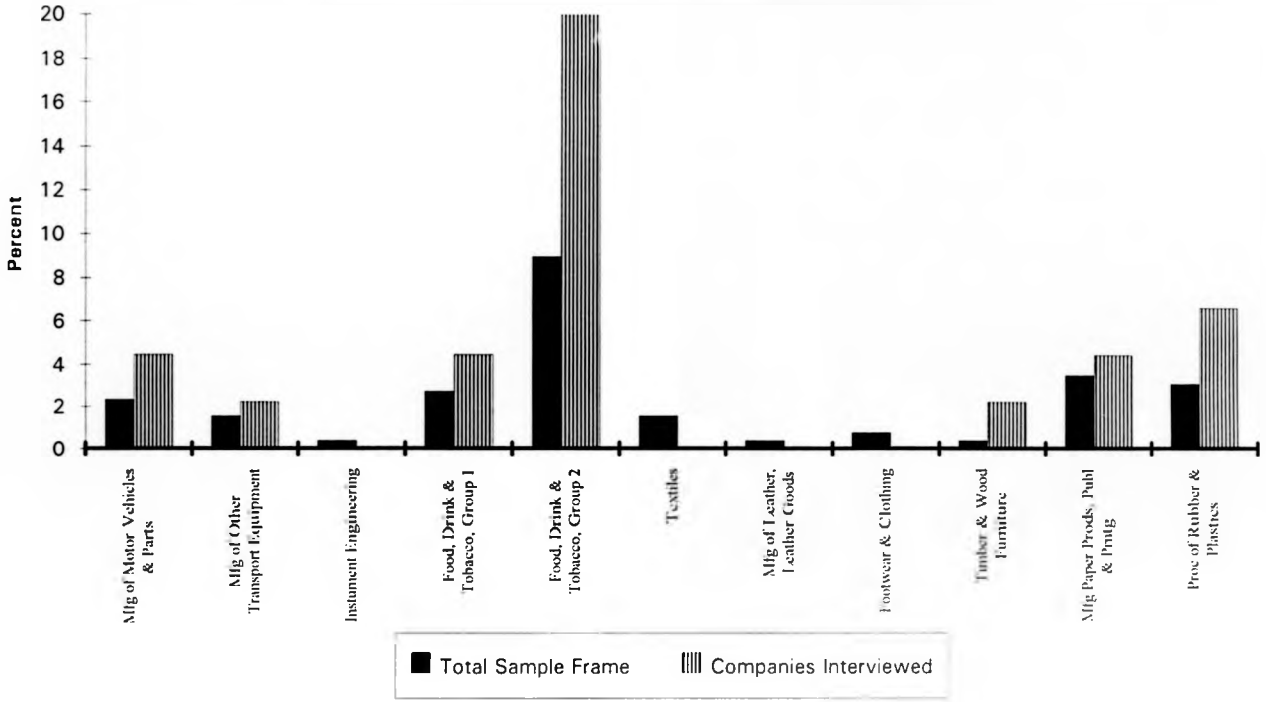


Figure 6.9

Percentage of Those Interviewed in an Industry Compared to Percentage in That Industry in The Sample Frame - Part 3

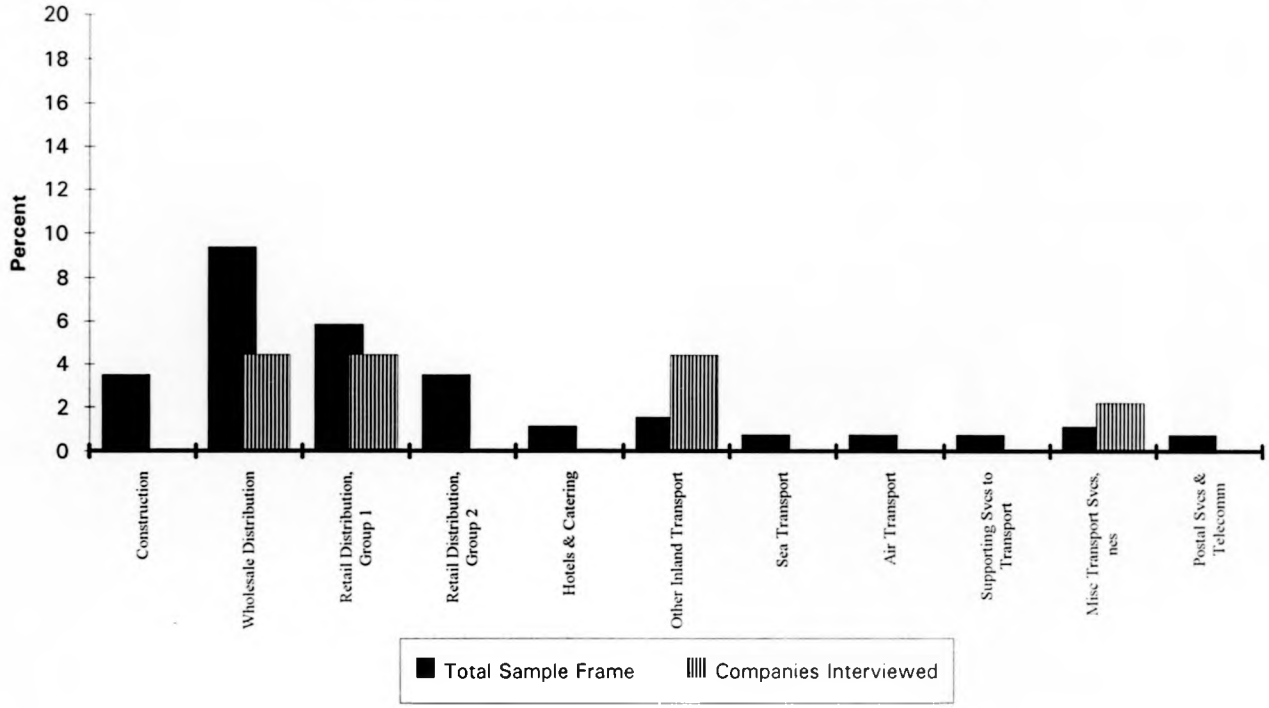
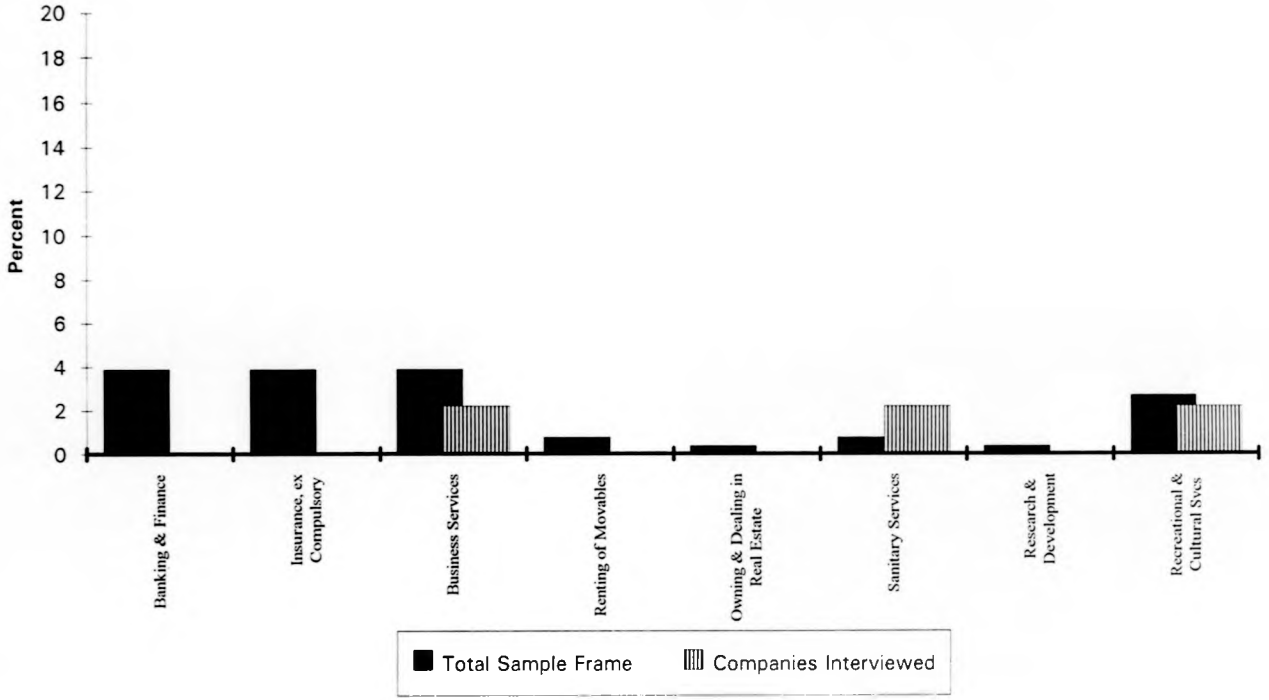


Figure 6.10

Percentage of Those Interviewed in an Industry Compared to Percentage in That Industry in The Sample Frame - Part 4



Chapter 7 ACQUISITION SEARCHES AND INFORMATION COLLECTION

7.0 Introduction

This chapter will examine the information collection and search processes involved in an acquisition. Chapter three examined the literature on this and discovered that the literature directly on these processes is sparse. It therefore widened its focus to include the decision literature. To carry this out it used a 3 part structure, based on figure 1.8 in chapter 1.

A) Where are companies searching? What are the limits of the initial search?

B) Who is the source of ideas?

C) How are companies collecting information on these potential acquisition candidates? Does the amount of information collected influence success?

This chapter will mirror this structure. Before this the author will recap the literature reviewed in chapter 3 and the hypotheses developed.

7.0.1 Summary of Chapter Three and Hypotheses Generated

To develop hypotheses on where a company looks for acquisitions, the 'rational economic man model' was contrasted with Simon's 'administrative man model' (1958). The former in its most rigid form expects a complete search of all possible options. The latter a limited search. Given this, the prescriptive literature was examined. From this it was concluded that industry and geography were the most likely factors to be used to limit a search area. Thus it was proposed that

3:2) The existence of an established limitation to the area of acquisition search will increase success levels.

3:3) Companies that place a limit on the industries in which they look to make acquisitions will perform better than those that do not.

3:4) Limiting the number of countries a company examines for acquisitions will increase success.

The second area where Simon's model, which attempts to explain actual behaviour, was contrasted with the rational economic man model, seen as an ideal by the 'Classical' strategic management literature, was the number of options considered. The latter implies that an infinite number of options be considered. This resulted in the researcher proposing the hypothesis that:

3:1) The greater the number of options formally considered the higher will be the level of acquisition success ?

These hypotheses will form the central part of sections 7.1 and 7.2.

The source of the solution to a decision making problem is not considered by the general decision literature. The author therefore focused on the prescriptive literature on acquisitions. This proposes that external agents may not act in a company's interest. The researcher, therefore, hypothesised that:

3:5) Acquisitions stimulated by brokers will perform worse than other types of acquisition.

3:6) Acquisitions stimulated by the seller will perform worse than other types of acquisitions.

3:7) Acquisitions stimulated within the company will perform better than other types of acquisitions.

These hypotheses will form the core of section 7.3.

The third part of chapter 3 focused on the number and type of information sources used and their effect on success. To develop hypotheses it contrasted the rational economic man model and Simon's administrative man. It also examined how it has been proposed that the availability of information, and the experience of the person

running the project, affects the number of sources used. This generated the hypotheses that:

3:8) The greater the number of information sources used the greater the probability of success.

3:9) The more people requested to provide information the higher the probability of success.

3:10) Managers who are regularly circulated with information are more likely to use more information sources .

The empirical content of this thesis will therefore begin by examining these hypotheses starting at the chronological beginning of the acquisition process, searching for an acquisition.

7.1 The Acquisition Search Phase

The model, shown in figure 1.8 proposes that companies conduct an initial information search and screen, followed by a more detailed evaluation of 1 candidate. This requires that a company has a series of screening criteria to filter out those candidates that it is not interested in (Jones 1982). Thus the company must have an established limitation to the area it will search for an acquisition, contrary to the expectations of the rational economic model.

All the companies interviewed limited their acquisition searches using preliminary filters

Thus it was impossible to test the most strict interpretation of the rational economic man perspective, namely, the hypothesis that:

3:2) The existence of an established limitation to the area of acquisition search will increase success levels.

An extreme interpretation of the above could argue that the opposite approach, that proposed by the rational economic man model of searching all candidates, was A) impossible, B) so ineffective that everyone had abandoned it, or C) that companies that had used it had been so inefficient that they had died out. Equally it is possible that companies were following the fashionable trend for focus, as a reaction to earlier conglomerate booms. (Peters and Waterman, 1982) This leaves the 2 sub-hypotheses

3:3) Companies that place a limit on the industries in which they look to make acquisitions will perform better than those that do not.

3:4) Limiting the countries a company examines for acquisitions will increase success.

7.1.1 Industry Search Limitations

All the companies interviewed placed a limit on the industry within which they were willing to acquire.

Thus it was impossible to test hypothesis **3:4,** with a wide interpretation of what is an industry. There was, however, wide variation in how narrowly these limits focused searches. One company, company H, which was prepared to acquire outside its present product areas, stated:

> 'The first thing is to establish the nature of the business. Is this the sort of thing that the group has the management to control? In our case that does include a very broad range of basic industries.'

Even this excludes all services and high technology industries. All other companies were unwilling to acquire companies outside what they saw as the industry within which they already operated. The researcher did not examine whether companies were willing to acquire outside the 2-digit SIC code areas they operated in because

1) This would have required extensive time in an interview defining the SIC codes.

2) The initial results suggested this was not worthwhile as most companies limits were narrower than this.

3) It would have given an impression of rigidity to the filters which some did not have.

Another company, company S, was willing to acquire outside its present product areas, though it still limited itself to the light engineering sector. In a written brief to banks it stated:

> 'Acquisitions of some substance in new areas not directly related to the present businesses, but nevertheless having sufficient similarity in culture and management style, would fit well. The characteristics sought are: ... manufacturing of proprietary products avoiding the extremes of heavy engineering or high technology.'

This brief clearly limits this division of company S, to light engineering. The other divisions of company S were more clearly limited to areas of current operation.

Three industrial companies claimed to have no acquisition strategy to act as a search limitation, but rated fit with strategy or being within their current product areas as 1 of their 3 main criteria. Suggesting that although they may have no explicit acquisition strategy limiting search area, acquisitions were clearly limited by product market area.

No other company was prepared to acquire outside the area in which it already operated. Within this there was a range, however, of how broad the area was that companies were willing to consider.

A multinational food company stated:

> 'The second thing is to increase our branded position in the U.K. grocery market.' 'That is limited by sector, we are not interested in coffee for instance.'

A British service sector company stated:

'Each of our businesses has a clear portfolio role.' 'If I received an acquisition proposition from certain profit centres I wouldn't even open it, I would just sling it in the bin.'

This company had been highly acquisitive during the eighties

Another company:

'I am not saying that we would never look at anything outside of those areas we have clearly identified, because if, another business we are in, which might not be one that we want to expand, but an expansion opportunity comes along which is too good to miss we wouldn't want to miss it.'

A specialist retailer stated:

'We are not a business that is interested in diversification ..... We consequently typically acquire businesses similar to our own.' 'There would be 2 [criteria] 1) is it a competitor and is that enabling us to remove a competitor and 2) are the sites in locations which would complement our existing portfolio of sites. If they are all adjacent to our existing sites the target would be less attractive.'

This use of industry limits even applied to a UK company, which had during the nineties diversified into gas operations; they were only willing to acquire natural gas production assets.

Some companies, however, were more vague, leaving themselves more flexibility

'It needs to be adjacent....it needs to be related.'

'We are in the building and automotive markets so we wouldn't go and buy a textile company because we do not know anything about textiles'

One company had a clear hierarchy ranging from

'Doing what we do in the UK, through, doing what we do in the UK but doing it somewhere else, to doing something different which is targeted on the leisure area. So as you go down the criteria they get more difficult to justify even before you get to take account of the financial performance.'

The widest of these search briefs are still a limitation on the industries in which a company is willing to acquire An example of a fairly typical search process, in which these types of filters were used, is given in illustration 7.1. This shows that the limitations on the industry they were looking at were used very early on in the process before any detailed information was collected. Product area filters were used by all except one company to limit their acquisition search area. Some, however, were more explicit in delineating it than others. The scope of these filters did not appear to be influenced directly by the size of the company. But the present level of diversification. Companies limited themselves to growth within their current areas of operation. This, however, may be related to size. The second filter used by most companies was geography.

Illustration 7.1 Description of Filter Process Given by Company Alpha

Our standardised process comes down to an iterative decision tree process. First, does on a prima-facie examination the acquisition fit our strategic plan requirements, because we have defined the criteria for the sorts of businesses we would be looking at. They have to fit. For instance, if someone rings us up and says they have a company for sale and they would like us to come and look at the company or someone has identified a company they think they we might be interested in, or we might have identified a company, if on a prima-facie investigation we find that, company is predominantly in the business of wine importation and selling it to supermarkets we would not take it any further. It would not matter if it was the finest company in Britain if it doesn't fit our strategy, it would be out at that stage. That is a rapid strategic process, which is common to all our acquisitions, which determines whether we should devote any further resources to it. Having decided there is a prima-facie strategic fit we then go through an information collection process that collects data from the company that includes its past accounting records all its corporate history, information about its management and its ownership structure, a lot of information about its business, the shape of its business, the kind of its accounts, the numbers of accounts, the products mix information and then armed with that we would do a preliminary valuation of the kind of impact it would have upon the assumption that we could acquire the business on our business. That would then mean looking at what integration opportunities there are with our existing businesses, what it will do to our buying power, what it will do in enhancing certain agreements we already have with suppliers, etc. Having got to that stage and decided that this is looking better. All the time we are building up an increased commitment to the acquisition. We then have a very rigorous financial appraisal that is partly driven by our own board's requirements and partly driven by the fact that all Betas capital eventually comes from Alpha and to get the capital for the acquisition signed up we would have to meet Betas financial appraisal requirements. That is the final stage if it passes all those tests along the way. So you are talking to the people who are in the business and it may well be at a fairly early stage that you establish that the people who own the business have expectations that you are never going to meet so in that case you withdraw. If during this iterative process as we build up a picture of the business and its likely value and we continue to talk to the people as part of that process and are building up a view of their expectations if at the end we have a sort of marriage of our needs and our evaluation and their expectations that would then result in an offer that might lead to a successful acquisition.

7.1.2 Geographic Limitations to Acquisition Searches

Examining geographic limitations that companies imposed on acquisition searches did show a difference in behaviour. Table 7.1 shows the number of companies taking each of the 3 basic approaches:

A) Explicitly focusing on a geographic area - this varied from those companies that were looking at only specific areas of the United Kingdom, companies considering specific countries in Europe, those considering acquisitions in the United Kingdom and the United States of America, and some which were at present only considering acquisitions in a number of identified countries around the world. Examples included:

Company H 'We then look at the complexity of the business, we prefer to buy large units, large profit centres, mainly based in the UK and US.'

Company S 'Acquisitions will be considered in any geographic area; however there is a strong preference for the UK, the USA and Northern Europe in that order.'

Company C 'We have market areas we wish to expand in....I am not saying that we would never look at anything which is out of those areas.'

Company W 'Our area would be the whole of Europe, and clearly we would be more reluctant to make acquisitions the further east you go.'

Company L:

Researcher 'So the area you are currently looking at is limited geographically? But that is not a strategic decision but a pragmatic one?

Interviewee 'That's a pragmatic decision. We had an argument with the chairman last time we went through all this. He said but we are a global company, and we said yes chairman but that doesn't mean we are investing in Peru.'

Researcher 'But if Peru suddenly becomes interesting you would look at it?'

Interviewee 'Absolutely, it has got a long way to go though but the chairman has got his list of six countries we are looking at, at the moment, and those are the ones which I keep talking about, China, Vietnam, Mexico, the Far East and so on'

That is, many companies are targeting specific areas with other areas considered if other factors are particularly good. The limits, however, are not as clear cut as an initial examination would suggest.

B) Companies which already operated on a global basis and had operations in most countries

C) Companies which had not explicitly limited the countries in which they would acquire.

Table 7.1 **Number of Companies Limiting Acquisition Searches to Geographic Areas**

	Number of Companies
Specific limitation on target area	20
Companies which stated they operate on a global basis	15
Target countries not explicitly limited	10
No data	7

It was impossible to test hypothesis **3:4**: **Limiting the countries a company examines for acquisitions will increase success,** with all 3 categories used in table 7 1, no explicit limits, company considers itself global, or explicitly limits to the area a company will consider acquisitions.[1] To produce valid results, the researcher divided the companies into 2 groups those that used geographic limits to filter acquisition

candidates and those that did not. This included those companies which considered themselves to operate on a global basis. The results of this are presented in table 7.2

Table 7.2 Results of Chi-Squared Tests between Use of Geographic Limits to Search and Acquisition Success

Use of geographic limits in search process and general success measure[2] divided at:	Minimum expected frequency [3]	Probability of distribution occurring by chance
2.5	3.4	08768 * +
2.7	4.9	05991 * +
2.9	4.9	05991 * +
3.0	5.3	08763 * +
3.1	6.3	10562
3.2	7.3	02472 ** +
3.3	8.3	02752 ** +
3.4	8.3	02752 ** +
3.5	7.8	13029
3.6	6.3	00989 *** +
3.7	5.3	05290 * +
3.8	4.9	02749 ** +
3.9	3.9	01777 ** +
4.0	2.4	12742
4.1	1.5	22727
Sample Size 35 with 1 degree of freedom		
Use of geographic limits in search process and first specific success measure[4] divided at:	Minimum expected frequency	Probability of distribution occurring by chance
3.5	2.9	63816
3.6	3.4	45395
3.7	4.3	44646
3.8	4.8	34450
3.9	5.8	34345
4.0	5.3	07185 * +
4.1	5.3	07185 * +
4.2	4.8	23646
4.3	4.8	23646
4.4	4.3	10319
Sample size 27 with 1 degree of freedom		

Table 7.2 Cont. **Results of Chi-Squared Tests between Use of Geographic Limits to Search and Acquisition Success**

Use of Geographic limits in search process and second specific success[5] measure divided at:	Minimum expected frequency	Probability of distribution occurring by chance
3.0	3.7	.04965 ** +
3.1	5.1	.02856 ** +
3.2	5.1	.02856 ** +
3.3	6.5	.02125 ** +
3.4	7	.05499 * +
3.5	7.4	.02836 ** +
3.6	8.3	.13950
3.7	9.3	.27791
3.8	7.4	.30875
3.9	6.5	.09708 * +
4.0	5.1	.04021 ** +

Sample size 41 with 1 degree of freedom

* Significant at 10 per cent level

** Significant at 5 per cent level

*** Significant at 1 per cent level

\+ Companies that used geographic limits to searches had higher success levels.

This seems to support hypothesis **3:4**. It is therefore possible to reject the hypothesis that the rational economic man model would propose, that is:

7:1) Limiting an acquisition search by country would reduce success levels.

Associated with this is the question of the number of options a company considers. If a company followed the rational economic man model this would result in the parallel examination of infinite options. It is also seen as a goal to aimed at by the classical school. However, Simon's administrative man (1958) suggests that people do not do this. Therefore, the hypothesis **3:1) The greater the number of options formally considered the higher will be the level of acquisition success,** was proposed. This will be considered in section 7.2.

7.1.3 Section Summary

This section has found that all companies limited the area they searched for acquisitions by industry and many by geographic area. The evidence presented supports the hypothesis that **Limiting an acquisition search by geography increases success levels in acquisitions.** This thesis will now examine the number of options considered by companies.

7.2 The Number of Options Considered

Most companies interviewed, 34, said that when it came to the final decision they were only considering one option. Only 2 said they were considering as many as 6 options at this point. This is in line with the expectations of Simon's (1976[6]) model and more recently Mintzberg's empirical work (1975). The evidence on hypothesis **3:1) : The greater the number of options examined the higher the level of acquisition success ?** is presented in table 7.3 and is less clear.

Table 7.3 **Kendall Rank Correlations between The Number of Options Considered and Success**

	General Success Measure	Specific Success Measure One	Specific Success Measure Two
Sample Size	37	30	45
Number of options considered	.2172*	.0031	-.0218

* Significant at 10 per cent level

Note - Kendall rank correlation coefficients given not significance levels.

The significant correlation between the number of options considered and the general success measure supports the perspective that the more options considered the better. The number of options considered refers to a specific case, the success measure general results.[7] However, not only is the relationship with the second specific success measure not significant it is also marginally negative. The data was also very skewed as most companies only considered 1 option. It is therefore difficult to conclude there is sufficient evidence to support the hypothesis. This consideration of only 1 option at a time may increase the importance of the source of the idea to consider an acquisition. This will be considered next.

7.3 Source of The Idea

The source of an acquisition idea, buyer, seller or third party is 1 area this research covers where prior work has been conducted in the United Kingdom. Hunt (1990:69) proposed that 'seller initiated acquisitions are more likely to fail than buyer initiated'. However, he did not find evidence to support this. Hunt (1990), Kitching (1972, 1973, 1974), and the prescriptive literature (Allen and Hodgkinson, 1989A, Jones, 1982, Stallibras 1989) led the researcher to propose in chapter 3 that:

3:5) Acquisitions stimulated by brokers will perform worse than other types of acquisition.

3:6) Acquisitions stimulated by the seller will perform worse than other types of acquisitions.

3:7) Acquisitions stimulated within the company will perform better than other types of acquisitions.

It was not possible though to validly test these hypotheses, because the minimum expected cell frequencies in the chi-squared tests used were below 5.[8] Eight

companies said the idea had been bought to them by an adviser, 15 the seller and 23 that it was an internal idea. Hypotheses 3.5 to 3.7 were therefore restated as:

7:2) **Acquisitions resulting from ideas generated internally will perform better than those resulting from either approaches by a seller or a third party such as a merchant bank.**

The results of these tests are shown in table 7.4

The test results (in table 7.4) seem to support the hypothesis that acquisitions where the bidder was approached by the seller or a third party are less successful than those which result from internal ideas.

There are several possible hypotheses to explain this including;

A) Companies overpay in contested bids. These may be more likely where the seller, or a third party, approaches several buyers.

B) Third party advisers, such as merchant banks, are usually paid on a 'win' fee basis. Therefore, it is in their interest to complete the deal even if it is not good for the client.

C) Companies may get drawn into acquisitions that are peripheral to their search limits because it is available. Search limits are later expanded to post rationalise a deal.

D) External approaches may be made to board members who agree in principle without considering the implications and the company buys to save face.

E) External approaches may have fixed time-tables reducing the time available to build up a detailed picture of a company.

F) Companies which buy companies which were bought to them by the seller or a third party may be less rigorous in their information searches.

Table 7.4 **Results of Chi-Squared Tests between Source of Idea and Acquisition Success**

Source of acquisition and general success measure divided at	Minimum expected frequency[9]	Probability of distribution occurring by chance
2.5	3.3	.03653** +
2.7	4.7	.02479 ** +
2.9	4.7	.02479 ** +
3.0	5.2	.00581 *** +
3.1	6.1	.00728 *** +
3.2	7.1	.04826 ** +
3.3	8.0	.04685 ** +
3.4	8.0	.04685 ** +
3.5	8.0	.04289 ** +
3.6	6.6	.07375 * +
3.7	5.7	.05895 * +
3.8	5.2	.11174
Sample Size 36 with 1 degree of freedom		
Source of acquisition and first specific success measure divided at:	Minimum expected frequency	Probability of distribution occurring by chance
3.5	2.9	.65243
3.6	3.3	.56277
3.7	4.0	.35432
3.8	4.4	.26622
3.9	5.1	.02948 ** +
4.0	4.4	.12133
4.1	4.4	.12133
4.2	4.0	.13951
4.3	4.0	.13951
4.4	3.3	.41889
Sample size 30 with 1 degree of freedom		

Table 7.4 Continued **Chi-Squared Tests on Source of Idea and Acquisition Success**

Source of acquisition and second specific success measure divided at:	Minimum expected frequency	Probability of distribution occurring by chance
3.0	4.0	67808
3.1	6	17573
3.2	6	17573
3.3	7.5	11179
3.4	8	06006 * +
3.5	8.5	03021 ** +
3.6	9.5	12807
3.7	11	07044 * +
3.8	8.5	12161
3.9	7	05214 * +
4.0	5.5	01481 ** +
Sample size 44 with 1 degree of freedom		

Key

* Significant at 10 per cent level
** Significant at 5 per cent level
*** Significant at 1 per cent level
\+ The direction of the relationship positive, that is acquisitions resulting from an internal idea rather than an external approach were more successful.

There is no way of examining A to C above within the present research, all are plausible explanations.

This research found one example of an approach being made to the chairman who thought it was a good idea and, in spite of the analysis saying this was not a good idea the deal was concluded. Material from this interview is given in Illustration 7.2.

Illustration 7.2 **An Acquisition Made Because of A Chairman's Commitment**

The idea came from the chairman

It was one of these typical chairman to chairman conversations On the whole, people would have said there was a degree of logic to it.

The criteria given for the acquisition were:

Primarily because we wanted it That is a serious comment The price, and the impact on the group was not at the time deemed to be that important We wanted the brand and we were prepared to get it, come what may.

Well, all the way along everyone was quite comfortable with the idea of the purchase but only at the right price, and I think the final problem was the group making a decision on something the division would have to run In other words, the final yes or no decision was made at the group level, whereas the sector had a view on what they would have paid for it that was different, and lower, and therefore has been a source of some tension since then

Reviewing it was pretty good The final decision basically ignored the rest of the work on the development of the process

To test the proposal that external approaches are more likely to have fixed time tables reducing the time available to explore the acquisition the researcher examined the hypothesis that:

7:3) Acquisitions resulting from ideas generated externally will take less elapsed time to complete.[10]

The researcher also proposes to check this with the hypothesis:

7:4) Acquisitions resulting from ideas generated externally will take fewer man weeks work to complete.

The researcher, however, expected the relationship for this variable to be less clear cut as companies may use more people to compensate for the lack of time to complete the decision making process.

The elapsed time measure is aimed at capturing fixed time tables and delays. The man weeks worked measures how intensively the acquisition is worked on and the management resources devoted to the project. The reasons for using 2 measures of time were discussed in chapter 5 and will be examined in more detail in chapter 10.

The elapsed time from approach, or idea, to conclusion of acquisitions stimulated by external parties was shorter than those resulting from internal ideas. This was significant for three divisions of time, as shown in table 7.5. This is in line with the expectations of hypothesis **7:3.**

The relationship between the volume of management time spent on an acquisition and the source of the acquisition idea, was the reverse of the relationship between elapsed time and the source of the idea. It was, however, not significant, as shown in table 7.5. That is, acquisitions stimulated by internal ideas consumed less management time. This may be because they were more clear cut or that information collection and analysis was easier as companies already had a competitive knowledge of the target.

Table 7.5 Results of Chi-Squared Tests between Source of Acquisition and Time

Source of acquisition idea (internal or external) and elapsed time divided at	Minimum expected frequency	Probability of distribution occurring by chance
3 Months	3 0	66515
4 Months	4 4	72224
5 Months	7 8	46310
6 Months	8 3	29889
8 Months	9 2	04706 ** +
9 Months	8 3	04169** +
10 Months	4 9	07065 * +
5 and 10 months X	4 9	11628 [11]
Sample size 45		
Source of acquisition idea (Internal or external) and man weeks work divided at	Minimum expected frequency	Probability of distribution occurring by chance
40	9 0	20372
50	9 0	22555
28 and 75 X	6 2	16706
30 and 90 X	5 2	12526
25 5 and 69 X	5 7	16700
25 5 and 101 X [12]	4 8	26659
Sample Size 42		
X Tests had 2 degrees of freedom all other tests had 1 degree of freedom		
** Significant at 5 per cent level		
+ Acquisitions resulting from internal ideas were longer		

A second possible explanation is the data collected does not reflect the actual volume of work. Internally stimulated acquisitions may have had large volumes of management resources devoted to them by the person or unit proposing the acquisition, this work may then be passed on for the person interviewed to conduct the project. This work at the operating unit may not have been included in the figures given by the companies. In contrast, externally stimulated acquisitions may be rapidly passed to the manager who ultimately conducts the project without any major time input by anyone else.

The quality of the management time must also be considered. If large volumes of management time are used on an acquisition in a short period this requires more people who may not be familiar with the country, industry or acquisitions. They therefore, have to learn about the operation within the acquisition time. These results are not clear-cut. This, therefore, remains a possible explanation. This view that the involvement of external parties will affect the time taken will be further examined in chapter 10, in the section examining the use of consultants. The proposal that an external idea may be subject to less rigorous information collection will be examined in the next section.

7.3.1 Section Summary

This section has concluded that acquisitions resulting from either a seller or third party approach performed worse than those that resulted from an internal idea. A number of possible explanations were proposed none of which could be rejected. There was positive evidence that acquisitions resulting from external ideas took a shorter elapsed time.

The proposal that acquisitions resulting from external approaches will use fewer information sources will be considered in section 7.5. The researcher will first examine what information sources were used by companies and how many

7.4 Sources of Information Used

One key assumption of the rational economic man model is that the decision maker has all the relevant information available. This is not the case in most acquisition decisions. This section will describe what information companies said they used.

The two main sources of data used by companies as shown in table 7.6 were

a) Internal records including records of competitive activity with the target, market share data and cost structures from similar operations the bidder already owns;

b) Data from the target either through direct access to the company's records or an information memorandum.

Twenty companies claimed to have had complete access, and 16 information memorandums, 3 of which later had access to 'data rooms' before making a final decision.

Table 7.6 Types of Information Sources Used

Source of Data	Number of companies that used source in specific case covered.
Internal Data	46[13]
Complete access to company	20
Information memorandums	16
Press or databases	10
Industry reports	9
Customers	9
Market research and specialist companies	9
Former employees	3
Data from merchant banks, and city sources.	3
Published accounts [14]	2
Governmental sources including OECD, and EC	2

Many companies primarily relied on data from these two sources. There was, however, variation in how many additional sources were used:

A) Company B: 'If I remember rightly in the indicative bid we didn't have access to them,...just the information memorandum. ..I would say our internal sources, and at best, probably 1 external source.'

B) Company O: 'The patent section was an external issue but we have got our own patent specialists and they organise the patent searches, so if you like, that is the only 1 that would involve outside sources the rest, chemistry

and stuff was done internally ... We looked at the process patent, plant facilities, we met all their people. We had very good visibility because we knew the people there so we had excellent visibility. The key thing was testing out that the processes actually worked.'

through;

C) Company M: 'Internally there would have probably been principally 3 or 4 people, consulted, all of them would have had a knowledge of the business and there would have probably been 1 or 2 others, who would also have had a knowledge of the business but were outside our business, who we would have probably consulted.'

D) Company N: 'It was a mixture of the information provided by the vendor, and data provided by our offices in those countries, from publicly available sources and industry sources.'

E) Company V: 'We did the normal sorts of searches, I remember using various databases to see if we could find anything else and checking the offer document to various information we had already gathered.'

to,

F) Company X: Interviewee, 'Well the vendor Ω provided the sale document and we also used Nielsen, but in this case it was mostly based on what the vendor Ω gave us, because obviously they wanted to sell it.'

G) Researcher: 'Did you use clippings services and things like that?'

Interviewee: 'Yes, I think we did.'

Researcher: 'You had internal market share data?'

Interviewee: 'We didn't have share data on (product market), but we got it. We also did a research in the trade, so we got Saatchi, someone like that, to do an assessment, a consumer and trade assessment of the product. We wanted to find out that if we advertised that we would be able to grow the brand.'

H) and less conventionally

> 'Eventually we were allowed access to the finance director of the company and the managing director of the company, when it looked like we were serious contenders. But the majority of information came from a big box. '
>
> 'We were allowed to talk to the managing director of (the target) in a bar somewhere in Hollywood, I remember sitting there thinking this is bizarre '

Their internal information, however, was of a more conventional nature:

> 'We knew how much we were paying (for raw material), and we were able to say that it is ridiculous, they can't possibly be paying that, they must be paying less than that. And the same applies to the number of employees, people from our place knew (target name), because they had been round it. The guy who used to run (target name), for a long time was a well-known industry guru and everybody knew him and we talked to him '

That is, most companies were relying on their own data and vendor's data with various degrees of checks, and the due diligence process.

In two cases, where companies were buying companies in the former communist states, very little information was available at all:

Company G stated: 'Sales weren't measured, we knew production. We knew how big the volume was, yes '

Company R stated: 'Most of the information would be internal...There was not a great deal of data available on this which is what you would expect in Eastern Europe.....So we consulted extensively with the company's customers '

One company had to build its case primarily from external sources. This was the exception.

Interviewee: 'A lot of sources were from the city research houses and so on, companies house, industry bodies, industry research, statistics.'

Researcher: 'Did you learn anything from the target themselves? '

Interviewee: 'Very little. We checked up on a few facts just before we bid'

This reliance on internal and vendor data is further illustrated by figure 7.1 that shows the number of sources used by companies.[15]

Press and databases were used less frequently than might have been expected. This is perhaps because companies included this in internal data:

> 'When we are talking about (Company's Name) data sources, I include all the databases we subscribe to as being internal to (Company's Name).'

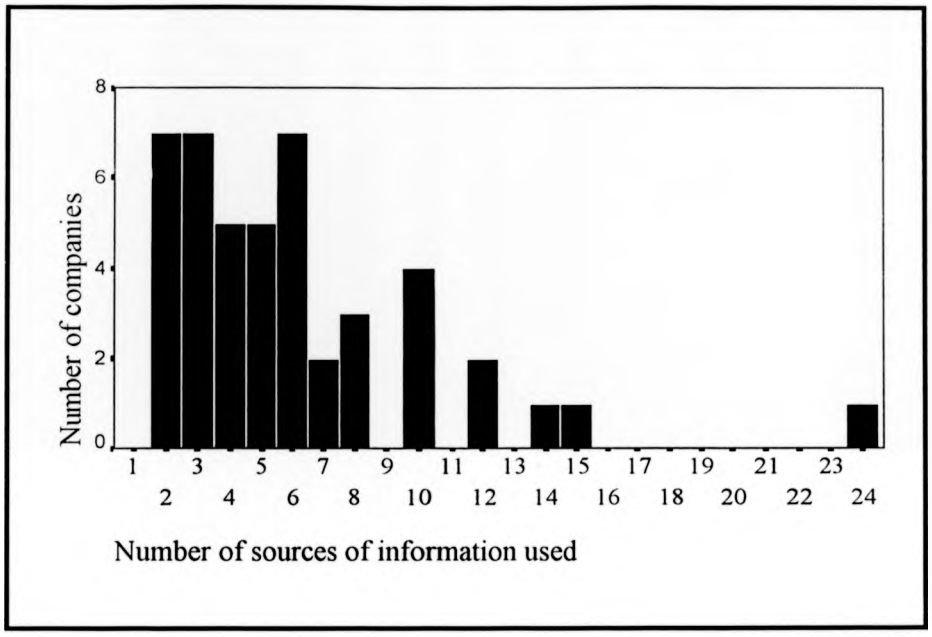
Other companies stated there were no press sources on the company they were examining:

Researcher: 'What about sources such as newspapers, Datastream, and Extel? That type of thing?'

Interviewee: 'Not for small deals.'

Only two acquisitions included in the sample were of British quoted companies.

Figure 7.1 **Number of Sources of Information Used**



Little illuminating was said about the use of market research companies, industry reports and specialist research companies. The number who used these, 15, is surprisingly low. However, it must be remembered that 32, companies had internal libraries and all companies, except the oil production companies, collected market research data on markets where they operated. It, therefore, seems likely that most companies had detailed market research and industry reports before looking at the company in question

Customers were a source of information for 9 companies. In 1 case the reason for buying the company was to gain access to a new set of customers through the company's distribution system

Company CPD[16]: 'In this particular thing the most overwhelming criterion was fit, in terms of geography and access to new customers. There were some seriously big German companies using this distribution system, and we thought that would give us access to them.'

In others, it was to check on data provided:

'We actually employed the same representative in a region, so we could by 1 way or another get information through that broker.'

or check that the purchase of the company would not effect the parent's sales or sales of the target,

'A good example might be, say sandwiches. We have a company that manufactures sandwiches specifically for *Dale*[17]. We don't supply any other retailers. We could be offered a competitor business who just makes sandwiches for another retailer. Now having said that, I am just giving you a hypothetical answer, because it is not 1 we would do. We would certainly go and talk to *Dale*[18] before hand on such a proposition, because I would suggest that it is 99.9 per cent certain that they would say if you go and buy that business *Wold*[19] you won't be making sandwiches for us the week after next.'

Two companies collected specific information from suppliers. One expected to gain cost savings in the parent operation as well as at the target because of the purchase

'Armed with the likely increase in scale we went to all our suppliers and discussed with them, without telling them why at that stage. We did presentations to our suppliers and outlined our general strategy and we asked all our key suppliers to come back with an indication of the terms that would be available for us at volume 1, 2, 3. What we did was a series of steps getting

> us up to the actual volume because we did not want to alert them to what we were doing. We didn't want to say if tomorrow we could double our sales of your products what would our terms be so we actually wrote to each of them and said, "at the moment we are here, if over the next 3 years we were able to develop our business to move from there to there, there to there, will you please indicate to us what impact that might have on our terms. So we got them to some extent pre-committed and then we were able to say well we know that if we can get this acquisition instead of waiting 3 years to get to there we can do it next week and at today's prices that's going to be worth X. The interesting thing is there is a double effect here. This acquisition not only enabled us to improve the profitability of the acquisition, the acquisition enabled us to improve the profitability of all the businesses that we already owned.'

That is, several companies discussed their acquisitions with their buyers or suppliers. For some companies, however, this was not relevant as they had no suppliers, and their customers were very diffuse.

Three companies had access to data from former employees of the target or its owner. In 2 cases this was serendipitous. In the other, the former owner was approached.

The use of information produced by merchant banks or the city was only used by 3 companies if information memorandums that were prepared by the seller are excluded. This is lower than some groups would hope. One reason for this appears to be that few of the acquisitions covered were for quoted companies. The 2 acquisitions of quoted companies did use city information sources, such as stockbrokers' reports. Many of the purchases covered were either from private owners, small parts of companies, and 2 purchases in the former communist block. Second, it is possible this

type of information is incorporated in to company libraries and not treated as an external source.

Two companies said government data was crucial, 1 to confirm that grants would not have to be repaid, and a second to confirm OECD and EU predictions about future agricultural production.

This section has shown that although a variety of sources are used, most companies rely on internal information and information from the target backed up by a due diligence review by accountants to confirm the information is accurate. Many companies would also use internal information to check the costs of raw material, trade margins, and the number of people required etc.. There is thus heavy reliance on internal data. This would place a premium on industry knowledge and/or knowing who will know, abilities that are likely to be increased by experience of the sector. This will be considered in chapter 10.

7.4.1 Section Summary

This section has briefly described the sources of information companies commonly used. It has concluded that companies tend to rely on internal information and information from the target backed up by due diligence work. Very few companies relied on outside data or used city information sources. This, however, may be a misrepresentation, as some companies included the use of databases within internal data. The researcher will now move on to examining the hypotheses presented in chapter 3 on, the effect of information collection on success levels.

7.5 Information Collection and Variation in Success Levels

One of the key assumptions of the rational economic man model is that the decision maker has all the relevant information available. It was shown in the last section that the levels of information available to base acquisition decisions in were variable, but it could rarely be described as complete. Given that, the rational economic man model is seen as a target to aim at it was proposed in chapter 3 that:

3:8) The greater the number of information sources used the greater the probability of success.

3:9) The more people requested to provide information the higher the probability of success.

The evidence presented on these 2 hypotheses in Table 7.7 seems to indicate a rejection of these hypotheses.

Table 7.7 Kendall Rank Correlations between Number of Information Sources Used and Number of People Asked for Information and Success

	General Success Measure	Specific Success Measure One	Specific Success Measure Two
Sample Size	34	30	45
Number of sources of Information used	-.0821	.0966	-.0318
Sample Size	33	29	40
Number of people asked for information	-.0945	.1554	.0105

Note - Kendall rank correlation coefficients given not significance levels.

This, however, treats all information sources as equal, which they are not. Many sources may have been used by companies who did not have access to the target companies financial records and, or physical assets to make up for this. Those companies that did have access to the target's accounts may have used fewer sources, as they required only to check the data they had access to rather than create the whole picture. The researcher therefore adapted the above hypotheses to take account of the quality of information generating the hypotheses:

7:5) Acquisitions where the companies had complete access to the targets financial information and physical assets will perform better than other acquisitions.

7:6) Acquisitions where the companies had access to either an information memorandum or the targets financial information and physical assets will perform better than other acquisitions.

The results of testing the hypothesis **7:5** are presented in table 7.8, and hypothesis **7:6** in table 7.9. Only one significant relationship was found when testing hypothesis **7:5** (for one division of the first specific success measure). This showed acquisitions which did not have access to internal data from the target performed better. The researcher therefore concluded there was no evidence to accept hypothesis **7:5**. No significant relationship between access to information from the target company and success was found (hypothesis **7:6**).

That is, the companies that had complete access to the target company's data did not perform better than those that did not, and that companies that used more information sources did not perform better. If, however, the companies that had access to information from the target company are using fewer information sources, as they are only checking the information, then these 2 factors might be counteracting each other. Therefore to effectively examine hypotheses **3:8)** and **3:9),** the researcher divided the

sample into those which had access and those which did not. This results in the hypotheses (**3:8 and 3:9**) being restated as:

3:8A) If a company has access to internal information from the target; the greater the number of information sources used the greater the probability of success.

3:9A) If a company has access to internal information from the target; the more people requested to provide information the higher the probability of success.

3:8A) If a company does not have access to internal information from the target; the greater the number of information sources used the greater the probability of success.

3:9B) If a company does not have access to internal information from the target; the more people requested to provide information the higher the probability of success.

Table 7.10 presents data on those acquistions where the bidder had either complete access or where an information memorandum was provided, and table 7.11 those that did not have any access to information from the target.

There appears to be no significant correlation between the number of information sources used and success even when companies which had access and those which did not were subdivided. No way of further quantifying the quality of the information available to the buyer seems available. The researcher, therefore, proposes to reject hypotheses **3:8** and **3:9** in all the forms that they have been restated.

7.5.1 Section Summary

This section has examined 2 basic hypotheses, **3:8 and 3:9**. No evidence was found to support these. The researcher, however, thought that this may be a product of companies with access to the target's internal information using fewer other sources of

information. It was, therefore, proposed to examine the hypothesis that companies with access to information from the target would out perform those without access. No evidence was found to support this. The researcher, having examined whether greater quality or greater quantity of information increased success, proposed that, given access, a greater quantity of information should increase success levels. No evidence was found to support this (Hypotheses **3:8A, 3:9A, 3:8B, and 3:9B).** The researcher therefore concluded that no simple relationship between quantity of information used to prepare an acquisition proposal and success existed. These relationships may be a product of factors underlying the number of information sources used. Given this, the researcher now proposes to examine the number of information sources used as a dependent variable.

Table 7.8 **Results of Chi-Squared Tests between Access to Internal Information from Target and Acquisition Success**

Access to internal financial information and physical plant and general success measure divided at:	Minimum expected frequency	Probability of distribution occurring by chance
2.5	2.7	1
2.7	4.1	.2394
2.9	4.1	.2394
3.0	5.0	.1380
3.1	5.9	.4351
3.2	6.4	.2471
3.3	7.3	.6109
3.4	7.3	.6109
3.5	6.8	.8984
3.6	5.9	.4351
3.7	5.0	.4583
3.8	5.0	.4583
3.9	4.1	.6967
4.0	2.7	.2746
4.1	1.8	1
Sample Size 33 with 1 degree of freedom		

Table 7.8 Continued **Chi-Squared Tests onAccess to Internal Information from Target and Acquisition Success**

Access to internal financial information and physical plant and first specific success measure divided at:	Minimum expected frequency	Probability of distribution occurring by chance
3.5	3.6	.3980
3.6	4.0	.2662
3.7	4.9	.4548
3.8	5.3	.1939
3.9	5.8	.1682
4.0	4.9	.2388
4.1	4.9	.2388
4.2	4.4	.1070
4.3	4.4	.1070
4.4	3.6	.0432 ** -
Sample size 27 with 1 degree of freedom		
** Significant at 5 per cent level		
- Access to information from the target was associated with worse performance		
Access to internal financial information and physical plant and second specific success measure divided at:	Minimum expected frequency	Probability of distribution occurring by chance
3.0	2.8	1
3.1	4.7	.4689
3.2	4.7	.4689
3.3	6.0	.1836
3.4	6.5	.3179
3.5	7.0	.4953
3.6	6.9	.4757
3.7	9.3	.6466
3.8	7.4	.7071
3.9	6.5	.747
4.0	5.6	.6993
Sample size 41 with 1 degree of freedom		

Table 7.9 **Results of Chi-Squared Tests between Access to Information from Target and Acquisition Success**

Access to information from target and general success measure divided at	Minimum expected frequency[20]	Probability of distribution occurring by chance
2.5	1.1	1
2.7	1.6	.51899
2.9	1.6	.51899
3.0	2.0	.63675
3.1	2.3	.36442
3.2	2.6	.20853
3.3	2.9	.65618
3.4	2.9	.65618
3.5	2.7	.37468
3.6	2.3	.65879
3.7	2	.37521
3.8	2	.37521
3.9	1.6	.37521
4.0	1.1	1
4.1	.8	1
Sample Size 33 with 1 degree of freedom		
Access to information from target and first specific success measure divided at:	Minimum expected frequency	Probability of distribution occurring by chance
3.5	1.8	.6336
3.6	2	.62785
3.7	2.4	1
3.8	2.7	.66184
3.9	2.9	1
4.0	2.4	.66184
4.1	2.4	.66184
4.2	2.2	.63819
4.3	2.2	.63819
4.4	1.8	.31910
Sample size 27 with 1 degree of freedom		

Table 7.9 Continued Results of Chi-Squared Tests between Access to Internal Information from Target and Acquisition Success

Access to information from target and second specific success measure divided at	Minimum expected frequency	Probability of distribution occurring by chance
3.0	1.2	1
3.1	2	.65324
3.2	2	.65324
3.3	2.5	1
3.4	2.7	.69245
3.5	2.9	.68676
3.6	3.3	1
3.7	3.9	.69652
3.8	3.1	1
3.9	2.7	1
4.0	2.3	1
Sample size 41 with 1 degree of freedom		

Table 7.10 Kendall Rank Correlations between Success and Number of Information Sources Used by Companies and Number of People Asked for Information which had Information from Target Company

	General success	First specific success measure	Second specific success measure
Number of sources of information used by companies with access to information from target or an information memorandum	- .1242	.0501	-.0293
Sample Size	25	21	31
Number of people asked for information by companies with access with access to information from target or an information memorandum	- .1516	.2465	.1280
Sample size	24	21	30

Note- Kendall rank correlation coefficients are given

Table 7.11 **Kendall Rank Correlations between Success and Number of Information Sources Used and Number of People Asked for Information by Companies that had no Information from Target Company**

	General success	First specific success measure	Second specific success measure
Number of sources of information used by companies with no access and no information memorandum	-.3531	-.3080	.0843
Sample Size	6	6	8
Number of people asked for information by companies with no access and but an information memorandum	.0857	- .2125	-.5238
Sample size	6	6	8

Note- Kendall rank correlation coefficients are given.

7.6 Factors Influencing the use of Information Sources

In chapter 3 it was proposed that the collection of more information by a company would lead to greater information use in acquisitions, as it had lower collection costs to the acquisition decision maker. This resulted in hypotheses **3:10** to **3:12** being presented.

3:10) Managers who are regularly circulated with information are more likely to use more information sources.

3:11) Managers at companies which collect market share data on markets which in they do not currently operate will use more information sources.

3:12) Companies which have corporate information libraries will use more information sources.

3:13) Companies that have arranged access to external corporate information libraries will use more information sources.

To further test hypotheses **3:12** and **3:13**, they were also restated in the form

3:12A) Companies which have corporate information libraries will request more people to provide information.

3:13A) Companies that have arranged access to external corporate information libraries will request more people to provide information.

No support for hypotheses 3:10, 3:12, 3:12A, 3:13 and 3:13A was found

The results of these tests are reported in appendix D, tables D 1 to D 3

To test hypotheses **3:11,** it was restated into the forms:

3:11A) Companies which collect market share data on geographic markets in which they do not currently operate will use more information sources

3:11B) Companies which collect market share data on product markets in which they do not currently operate will use more information sources.

3:11C) Companies which collect market share data on geographic markets in which they do not currently operate will ask more people for information.

3:11D) Companies that collect market share data on product markets in which they do not currently operate will ask more people for information.

No support for hypotheses 3:11A and 3:11C was found .

The results of these tests are presented in appendix D, table D 4

The results of the tests on hypotheses **3:11B** and **3:11D** are presented in table 7.12. These show evidence to support hypotheses **3:11B** and **3:11D.** That is, companies that collected basic market share data for products that they do not currently produce, use more information sources when considering acquisitions. This is not the tautology it appears as companies treated internal information as one source of information and included many sources of data on markets they operated in within that. Thus although companies that collect data on product markets in which they do not currently operate, have more internal information available on related products, they still collect more additional information from outside than those that do not.

The correlation with the number of people, however, may be a product of the size of the company.

Table 7.12 Results of Chi-Squared Tests between Company Collects Data on Product Markets it Does Not Operate in and Number of People Asked for Information and Number of Information Sources Used

Company collects data on product markets it does not currently operate in and the number of people asked for information used divided at:	Minimum expected frequency	Probability of distribution occurring by chance
11	7.8	.38654
16	5.3	.08469* +
19	5.3	.08469* +
Sample Size 36 with 1 degree of freedom		
Company collects data on product markets it does not operate in and number of information sources used divided at:	Minimum expected frequency	Probability of distribution occurring by chance
3	5	.02393**+
4	6.5	.01350**+
6	6.5	.01350**+
8	5.7	.05895*+
Sample size 34 with 1 degree of freedom		
* Significant at 10 per cent level	** Significant at 5 per cent level	
+ Direction of correlation positive		

Table 7.13 Pearson Correlations between Size and Number of People Asked for Information and Number of Sources of Information Used

	Sales in last set of accounts	Sales in penultimate set of accounts	Sales in anti-penultimate set of accounts
Sample Size	42	42	42
Number of people asked for information	.6331****	.6392****	.6212****
Sample Size	45	45	45
Number of sources of information used	- 0425	- 0446	- 0486
**** Significant at the .1 per cent level			

Note - Pearson correlation coefficients given.

That is, larger companies have more staff on average. There are, therefore, more people available to ask for information. The availability of this information encourages people to use it. The data in table 7.13 supports this view. The collection of data on product markets in which they do not currently operate, however, was not correlated with size as shown in table 7.14.

The other hypotheses proposed in chapter 5, where information collection is the dependant variable, include experience as an independent variable. These will be examined in chapter 10 with the other hypotheses on experience.

Table 7.14 Chi-Squared Test Results between Company Collects Data on Product Markets it does not Currently Operate in and Size

Company collects data on product markets it does not currently operate in, divided at	Minimum expected frequency	Probability of distribution occurring by chance
1 billion	4.1	.47609
1 5 billion	5.1	.95621
2 billion	7.6	.38543
2.5 billion	8.7	.15170
3 billion	7.7	.28878
Sample Size 40 with 1 degree of freedom		

7.6.1 Section Summary

This section has examined a number of hypotheses concerning the factors that affect the number of information sources used. It has concluded that there is no support for any hypotheses that the presence at a company of an information library or that it has arranged access to an external information library, increased information use There was evidence to support the hypotheses that companies that collected information on product markets in which they do not currently operate, do collect more information sources This is in line with the Thordsen et al (1990) findings and the prescriptions of the finance textbooks

7.7 Chapter Summary

This chapter has examined where companies search for acquisitions and how companies collect information to make a decision. It found that all companies limit the industry they look at for acquisitions, and many limit the country. It was found that limiting the area a company searched by geography was associated with an increased success level.

Few companies considered many options. Thirty-four companies, considered only whether to buy or not. There was very limited evidence to support the hypothesis that **the more options examined the higher the level of success.** Acquisitions that resulted from a seller or third party approach to the acquirer were less successful than those that resulted from internal ideas.

Companies tended to rely on internal information or information from the target company. This reliance may, however, be overstated as some companies implied that within internal sources they included databases and external material that they subscribed to on a regular basis. Few companies mentioned city sources as important except as a conduit for information from the target.

There was no evidence to support the view that the more sources used the greater the levels of success.

Companies which had corporate libraries did not use more information sources. However, those companies that collected information on product markets in which they did not operate did use more sources of information and asked more people for information.

In conclusion, this chapter has examined the information collection processes used by companies and found that they rely mainly on their own information and information from the target. The number of sources of information does not appear to affect success levels. Internally generated ideas, however, were more successful than external ones. A summary of the hypotheses examined in this chapter and the results generated are presented after this section. Chapter 8 will examine what companies do with this information, how they process it and what criteria are used to make acquisition decisions.

7.8 The Main Hypotheses Considered in This Chapter and Conclusions

Number of Options

3:1) The greater the number of options formally considered the higher will be the level of acquisition success ?

There was limited support for this hypothesis although most companies only consider yes or no as options.

Search Area

3:2) The existence of an established limitation to the area of acquisition search will increase success levels.

3:3) Companies that place a limit on the industries in which they look to make acquisitions will perform better than those that do not.

It was impossible to test these hypotheses as all companies limited the area they searched by industry.

3:4) Limiting the countries a company examines for acquisitions will increase success.

There was support for this for all 3 success measures used

Source of Idea

3:5) Acquisitions stimulated by brokers will perform worse than other types of acquisition.

3:6) Acquisitions stimulated by the seller will perform worse than other types of acquisitions.

3:7) Acquisitions stimulated within the company will perform better than other types of acquisitions.

It was impossible to test these hypotheses Thus the following hypothesis was tested

7:2) Acquisitions resulting from ideas generated internally will perform better than those resulting from either approaches by a seller or a third party such as a merchant bank.

There was evidence to support this for all 3 success measures used

7:3) Acquisitions resulting from ideas generated externally will take less elapsed time to complete.

There was evidence to support this hypothesis However, it does not hold for all divisions of elapsed time used

7:4) Acquisitions resulting from ideas generated externally will take fewer man weeks work to complete.

There was no evidence to support this hypothesis

Information Sources Available and Used

3:8) The greater the number of information sources used the greater the probability of success.

3:9) The more people requested to provide information the higher the probability of success.

There was no support for these hypotheses. They were restated to take account of the probable superior information available from access to information from the target, but no evidence was found to support these hypotheses.

To further test hypotheses **3:8** and **3:9,** the sample frame was divided into those companies which had access to information from the target, and those which had not. Hypotheses **3:8** and **3:9** were tested for each group. No support was found for these hypotheses for these subgroups. It was, therefore, concluded that there was no simple relationship between quantity of information used and success levels.

Factors influencing the use of information sources

3:10) Managers who are regularly circulated with information are more likely to use more information sources.

3:12) Companies which have corporate information libraries will use more information sources.

3:13) Companies that have arranged access to external corporate information libraries will use more information sources.

No support was found for these hypotheses, or for their adapted form which referred to access to external corporate information libraries.

3:11A) Companies which collect market share data on geographic markets which they do not currently operate will use more information sources

3:11B) Companies which collect market share data on product markets in which they do not currently operate will use more information sources.

3:11C) Companies which collect market share data on geographic markets in which they do not currently operate will ask more people for information.

3:11D) Companies which collect market share data on product markets which they do not currently operate will ask more people for information.

There was no support for 3:11A and 3:11C. There was, however, evidence to support hypothesis 3:11B and 3:11D.

Footnotes

[1] The minimum expected frequency was below 5 for more than 20 per cent of the cells in the contingency tables. A Fisher exact test is not appropriate for a test which uses a 2 by 3 contingency table.

[2] The general success measure used was the same as Datta and Grant's (1991) scale. The respondents were asked to respond with respect to their recent acquisition programme. The minimum value recorded was 1.9, the maximum, 5.0, mean, 3.33, and standard deviation .76. See appendix A question 31.

[3] The normally accepted minimum expected frequency for a chi-squared test to be valid is 5 (Kanji, 1993:69). Where the for tests which use 2 by 2 contingency tables where the minimum expected frequency is below 5 the results of a Fisher exact tests are reported. The Fisher exact tests is only valid for 2 by 2 contingency tables, see Siegel and Castellan, 1989:103-110 for details.

[4] The first specific success measure focused on the success of a specific acquisition and was based on the criteria that the interviewee felt were the three most important in that acquisition. The minimum recorded value was 2.5, the maximum 5 and the standard deviation .673. See appendix A question 54.

[5] The second specific success measure was a replication of Datta and Grant's (1991) success measure as shown in figure 6.1, where respondents were asked to respond with respect to the specific case discussed. The mean was 3.61, minimum 1.545, maximum 5.00, median 3.7 and standard deviation .797.

[6] This is the third edition of the book which was originally published in 1945. The third edition however has an additional introduction, which is referred to in this thesis.

[7] The correlation between the three success measures are given in table D 8 in appendix D.

[8] For 2 by 3 tables a Fisher exact test is not appropriate. Therefore for valid tests to be conducted a minimum expected frequency of 5, the normally accepted minimum for a chi-squared the test to be valid (Kanji, 1993:69) , is required

[9] Where minimum frequency is below 5 , a Fisher exact test result is reported.

[10] This is similar in its basis to hypothesis 5:33. The greater the number of different consultants used the shorter the elapsed time. This will be tested in chapter 10.

[11] Note chi-squared test result reported. It was not possible to divide the sample into three groups by elapsed time and still maintain a minimum expected frequency of 5. The minimum recommended for a valid chi-squared tests to be conducted on a sample of this size (Siegel and Castellan 1988:123). A Fisher exact test is not valid where a 3 by 2 contingency table is used.

[12] Note a chi-squared test result is reported as Fisher exact test is only appropriate for tests which utilise 2 by 2 contingency tables.

[13] All except two companies on which data was collected on this area.

[14] This excludes the companies which had access to internal accounts from the target.

[15] One company which said it used 100 sources is excluded from the graph to make it more readable.

[16] Name of company changed.

[17] Name of well known retailer changed.

[18] Name of well known retailer changed.

[19] Name of company being interviewed.

[20] All tests results presented are from Fisher exact tests.

Chapter 8 DECISION CRITERIA

8.0 Introduction

The previous chapter explored how companies search for acquisitions and how information was collected. It concluded that companies rely mainly on their own information and information from the target and that the number of sources of information does not appear to affect success levels. Internally generated ideas, however, were more successful than external ones.

This chapter will examine the decision criteria used in acquisitions. Chapter 4 examined, which criteria the literature expected to be used, and how they should be applied. It concluded that finance theory proposes that all companies should use discounted cash flow (DCF) measures preferably net present value (NPV). But if necessary internal rate of return (IRR)could be used (Samuels, Wilkes and Brayshaw, 1990:162). Other measures are viewed as having serious shortcomings. Their use, therefore, should reduce success levels as they will produce incorrect decisions[1]. Interest rates used in NPV calculations should be established for each project, unless the consequences of the project are not sufficiently significant as to make the cost of developing a specific rate greater than the benefits. The empirical work done in the United Kingdom (Pike 1983, 1988) found that most companies did use DCF techniques but not all and not as their only capital budgeting technique. The finance literature implied that all companies should use the same decision criteria (Discounted Cash flow Methods). Pike (1983), however, found that the size of company affected the propensity of companies to use discounted cash flow measures.

Given the literature review in chapter 4 briefly outlined above, 5 main areas seem relevant to the examination of acquisition decision criteria.

a) What criteria were used by the companies interviewed

b) How these criteria were applied.

c) How the use of DCF techniques affects success

d) How this behaviour can be explained

e) How does the use of other finance techniques influence success.

This chapter will deal with the first two of these areas, what criteria were used by the companies interviewed, how these criteria were applied The other three areas; How the use of DCF techniques affects success; How this behaviour can be explained, and; How the use of other finance techniques influence success, will be examined in chapter 9.

Thus the researcher will begin by examining what criteria were used to make acquisition decisions.

8.1 Use of Financial and Accounting Measures in Acquisition Decisions

The finance literature proposes the use of discounted cash flow measures (DCF) and not the effect on earnings per share (EPS), payback and accounting rate of return measures (ARR). This section will look at which of these techniques were used by the companies sampled to make acquisition decisions. This will be followed by an examination of the combinations of the techniques used and which of the two main DCF techniques were used. Section 8 4 will explore what other factors were important in making acquisition decisions at the firms interviewed.

Table 8 1 summarises the use of the financial decision criteria considered by the literature in the companies interviewed.

Table 8.1 Financial Criteria Used by Companies in Acquisition Decisions

	Number of Companies	Percentage of Sample
Companies that used a DCF measure as a decision criterion within their acquisition process	41	80.4
Companies that used effect on EPS as a decision criterion	33	64.7
Companies that used payback as a decision criterion	24	47.1
Companies that used accounting rates of return as a decision criterion	22	43.1
Companies that did **not** use a DCF measure within their acquisition process	10	19.6
Companies that used DCF as 1 of their 3 main decision criteria	24	47.1
Companies that only used DCF measures as financial decision criterion	6	11.8

DCF	Discounted Cash Flow
ARR	Accounting Rate of Return
EPS	Effect on Earnings per Share

8.1.1 Use of Discounted Cash Flow Criteria

Table 8.1 demonstrates that DCF measures were the most common criteria to review acquisitions and that for a majority[2], 24 companies, DCF measures (either net present value (NPV) or internal rate of return (IRR)) were one of the three key decision criteria focused on in the acquisition. Contrary to the expectations of the finance literature, 10 companies said they did not use discounted cash flow measures at all. Seven of these 10 companies gave reasons for this. Three said they were unable to accurately predict future cash flows and therefore thought DCF techniques were not worthwhile, and 4 that their chief executive or board did not understand them.

'I would base the price and valuation on the current years profit, because we know that it is substantiated...One thing is for sure is that if you make a forecast for 95 *(this interview took place in summer 1994)* it won't be right '

'I find it extremely difficult to forecast what is going to happen at the end of the year. If you then look at developing cash flows for 5 or 10 years I think the quality of the assessment is very difficult to get a feel for....'

'We don't use any of these sophisticated discounted cash flow techniques and the reason for that is we don't, we cannot see into the future, we cannot judge what the discount rate should be, and what the value would be.'

'Internal rates of return, our management tend not to look at that, our chief executive doesn't understand it, doesn't want to..'

'What is not particularly important for our board is to give them complicated analysis.'

One company was in the process of considering whether it should use DCF analysis.

A further 9 companies who used discounted cash flow analysis did not place it as one of their three key criteria.[3] Their reasons for not using DCF included :

A) Four companies thought the data available was not reliable enough to predict future cash flows in this specific case. This included 1 company purchasing a company in the former East Germany where no accounts existed and 2 companies purchasing oil assets which were unlikely to come into production for 5 to 6 years.

B) At 1 company the interviewee thought that the acquisition was being driven by board wishes, and although a DCF analysis was conducted it was ignored by the board. The stated reasons for purchase being :

'Primarily because we wanted it, that is a serious comment, price and the impact on the group was not at the time deemed to be that important, we wanted the brand and we were prepared to get it come what may '

C) Four companies gave factors within their three key criteria which they considered to be driving the discounted cash flow analysis and dominating the conclusions of the DCF analysis One company stated its three key criteria in the case discussed as, 'profit margin, fixed cost structure and variable cost structure' and later stated, 'in this case the most important thing is an NPV.'

In contrast no company offered an explanation of why it used DCF techniques, perhaps suggesting that the use of DCF techniques for investment decisions is now viewed as the received wisdom. Given though that these were all large companies, that with 1 exception they had sales over £200 million, it is perhaps surprising that 10 did not use DCF techniques in acquisition decisions given the level of support for them in the finance literature.

Only 6 companies followed the more strict interpretation of the finance literature (Lumby 1998:110) and only used DCF and did not also use other capital budgeting techniques (effect on earnings per share (EPS), accounting rates of return (ARR) or payback). Thus although DCF's use is wide-spread amongst large companies it is not always used and only in a minority of cases is it the only measure used as a stricter interpretation of the finance literature would recommend.

In contrast to DCF's wide use no company said it used option pricing for acquisitions although the oil companies interviewed stated option pricing might be used to value exploration prospects, but not acquisitions at present.

8.1.2 EPS Use as A Decision Criterion

The second most common financial measure used was earnings per share which was used by 31 companies. This number is surprisingly high given that the financial textbooks tend to ignore it as an investment decision criterion or give it a limited examination concluding that it should not be used. Further, Pike (1983, 1988) did not consider EPS as a capital budgeting technique.

Only 2 companies rationalised why they used EPS. They stated that it was because it was a measure the city looked at:

> ' We see EPS as important in selling it to the city.'
>
> 'The reason for earnings per share being of interest is that is what shareholders look for.'

8.1.3 Use of Payback

Payback was used by 33 companies (64.7 per cent), this is again surprising if you expect companies to operate in a way proposed by the strictest interpretation of the finance theory (Higson, 1986). The less strict view (Frank, Broyles and Carleton, 1987), however, would have predicted payback's use as a safeguard measure in conjunction with DCF measures. It is, however, a lower percentage of companies than Pike (1983, 1988) found in his research on the use of capital budgeting techniques in investment decisions in large UK companies (92 per cent in 1985/1986 and 81 percent in 1980/81). No company rationalised paybacks use. One company acknowledged that payback was a crude measure; 'We use payback, although I appreciate it is a crude measure.' No other company felt obliged to defend its use of payback as a criterion.

8.1.4 Use of ARR

Accounting rate of return measures like payback and EPS does not receive theoretical support though it was still used by 22 companies (43.1 per cent). This again is a lower percentage than Pike's surveys (1988, 1983) and Petry and Sprow's (1993) results on general investment decisions.

8.1.5 Section Summary

This section has shown that DCF measures are commonly used. The theoretically incorrect finance decision criteria, payback, accounting rate of return (ARR) and earnings per share (EPS) are also widely used. Few firms relied on only 1 capital budgeting technique to examine acquisitions. The combinations of techniques companies which used will be examined in section 8.2.

8.2 Combinations of Capital Budgeting Techniques Used in Acquisitions

The finance literature proposes that companies should only use discounted cash flow techniques to make investment decisions. Section 8.1 has shown however that companies are using other techniques and usually more than 1. The combinations used by companies are shown in table 8.2. Four features stand out in table 8.2:

A) One company did not use any of the 5 conventional capital budgeting techniques.

B) Most companies used DCF measures plus other capital budgeting techniques.

C) Only the company which did not use any conventional techniques did not use EPS or DCF.

D) Payback was used mainly with more than 2 other criteria, and always at least 1 other.

Table 8.2 Combinations of Capital Budgeting Techniques Used in Acquisition Decisions

Capital Budgeting Techniques Used	Number of Companies	Percentage (To 1 Decimal Place)
Did not use any conventional capital budgeting techniques	1	2.0
EPS	3	5.9
IRR	1	2.0
NPV	4	7.8
1 Method	8	15.7
EPS and IRR	3	5.9
EPS and NPV	1	2.0
EPS and ARR	3	5.9
IRR and NPV	1	2.0
IRR and ARR	1	2.0
IRR and Payback	3	5.9
NPV and ARR	1	2.0
2 Methods	13	25.5
EPS, IRR and NPV	3	5.9
EPS, IRR and ARR	1	2.0
EPS, IRR and Payback	1	2.0
EPS, NPV and Payback	1	2.0
EPS, ARR and Payback	3	5.0
IRR, NPV and Payback	2	3.9
IRR, ARR, Payback	1	2.0
NPV, ARR and Payback	2	3.9
3 Methods	14	27.5
EPS, IRR, NPV, and ARR	4	7.8
EPS, IRR, NPV and Payback	5	9.8
EPS, IRR, ARR, and Payback	3	5.9
IRR, NPV, ARR, and Payback	1	2.0
4 Methods	13	25.5
EPS, IRR, NPV, ARR, and Payback	2	3.9
5 Methods	2	3.9

8.2.1 Companies Not Using Conventional Capital Budgeting Techniques

In contrast to most of the sample (42 companies, 82 4 per cent) who used more than 1 technique, 1 retail company did not use any conventional financial evaluation techniques at all[4]. It focused on:

> ' The number of sites, the opportunity of merging the 2 business into a single business and saving operating costs, the potential for sales growth under 1 brand.'
>
> 'It wouldn't be on a earnings basis it would be on a value of sites basis... We are going to convert it to our style anyway We are not buying it as a going concern, we are buying trading opportunities... we would try to appreciate what those sites would cost....'

This company's approach can be summarised as examining the cost of achieving the same number of sites through organic means It thus ignores the cost of capital, a factor which is core to discounted cash flow techniques, and assumes that increasing the number of retail sites it owned was a good idea. The most common approach, however, was the use of other measures in addition to DCF measures.

8.2.2 Use of Discounted Cash Flow Techniques With Other Capital Budgeting Techniques

Thirty-five companies used DCF plus other measures Few companies relied only on 1 measure (8, 15.7 per cent). Only 4 companies used the approach that the strictest observance of financial theory would prescribe, that the only criterion used is NPV, which should incorporate all information (Lumby 1988:110) In comparison, Pike's (1988) 1985 data found an even smaller percentage of companies using only 1 measure (8 per cent).

8.2.3 Use of EPS and DCF

Table 8 2 also shows that, except the 1 company that did not use any of the 5 capital budgeting techniques in its acquisition decision making process, no other company failed to use either a DCF measure or EPS That is, no company relied on ARR or payback Thirty-three companies used at least 2 of IRR, NPV or EPS A chi-squared test was done to examine if a negative relationship between DCF and EPS existed, this was significant at the 10 per cent level.[5] A test of the relationship of EPS used and DCF being one of the three key criteria used, produced a significance level of 50 per cent

8.2.4 Use of Payback with Other Capital Budgeting Techniques

The notable feature about the use of payback in table 8.2 is that only 12 5 per cent of companies which used payback (3 out of 24) used it with only 1 other decision criterion. For the 4 other capital budgeting techniques, between 22 and 30 per cent of the companies that used a technique, used it on its own or in combination with only 1 other capital budgeting technique. [6] The average number of budgeting techniques used by companies using payback was 3.41 compared to 2.7 in the sample as a whole.

The relationship, however, between using payback and using more than 1 other criterion though was not significant.[7] The use of payback was not correlated with the use of the other individual techniques DCF, ARR or EPS.

This contrasts with Pike's (1988) research who found 6 percent of companies using only payback, and a further 23 percent used payback with 1 other method. That is, he found 31 per cent of companies that used payback, used it either on its own or with only 1 other technique.

Payback's position as a secondary criterion in the decisions covered by this research is reinforced by the fact that of the 18 companies that used payback, and stated their 3

key criteria for a specific case, only 4 placed payback as 1 of their 3 key criteria, and in only 2 cases was it jointly the most important criterion. This evidence would fit the view that it is being used as a secondary safeguard measure which the less rigid finance literature (Franks, Broyles and Carleton, 1985:71) would see as its place.

The above data also would fit Pike's (1988, 1983) trend of payback declining in significance but not use, as it increasingly is used in conjunction with other measures. His data the on use of capital budgeting techniques in 1975 shows that, 46 per cent of companies used it on its own or with 1 other measure, (63 per cent of those using payback), in 1985 this was 29 percent (31 per cent of those using payback). [8]

8.2.5 Section Summary

The key features of table 8.2 are that, although payback is commonly used it is never used on its own and rarely with only IRR. The majority of companies (35, 68.6 per cent) use DCF plus other techniques and all except 1 use either DCF or EPS. The writer will now look at which of the 2 common DCF techniques IRR or the theoretically preferable NPV were used in the companies interviewed.

8.3 Use of Internal Rate of Return or Net Present Value

It can be seen from Table 8.3 that IRR was the more commonly used DCF technique. It was used by 32 companies compared to the 27 companies that used NPV. More companies, however, used IRR and NPV together than used IRR on its own or NPV on its own.

Table 8.3 Use of Internal Rate of Return and Net Present Value at Companies That Used Discounted Cash Flow Techniques

	Number of Companies	Percentage of Total (To 1 decimal place)	Percentage of those using DCF (To 1 decimal place)
Companies that used IRR	32	62.7	78.0
Companies that used NPV	27	52.9	65.8
Companies who used NPV and not IRR	9	17.6	22.0
Companies who used both NPV and IRR	18	35.3	43.9
Companies who used IRR and not NPV	14	27.4	34.1
Total number of companies that used DCF	41	78.8	100
Companies that only used NPV and no other financial criteria	4	7.7	9.8

Only 9 companies used only NPV, most companies either used only IRR, 14, or both IRR and NPV, 18. The only reason given for the greater use of IRR was:

> 'We would tend to look at an IRR, for the specific reason that it is a measure people can understand.'

Some companies thought having to establish a discount rate was a disadvantage of NPV. Only 1 company gave a reason for using only NPV analysis -

> 'Our aim is an NPV not an IRR because we have an indefinite holding period for an acquisition'

The reasons for using IRR over NPV or NPV over IRR, however, were not generally explored in the interviews.

These results show both methods were used together less often and that there was greater use of the 2 methods on their own than Pike (1988) found in 1985.[9]

8.3.1 Section Summary

In summary, IRR, of the DCF techniques, was the more commonly used (32 companies), but more companies used IRR and NPV together (18 companies) than only IRR(14 companies) or the theoretically more correct method of using only NPV(9 companies). The capital budgeting techniques, however, considered by the finance literature were not the only criteria that companies stated they used to consider acquisitions. The researcher will now examine the other criteria which companies said they used to examine acquisitions.

8.4 Use of Other Decision Criteria

The finance literature would propose that all information should be incorporated in NPV and only NPV should be looked at when making a decision (Higson, 1991, Samuels, Wilkes and Brayshaw, 1990). The strategy literature would argue that in addition an organisation's strategy should be considered since this is the only way it is going to develop a sustainable competitive advantage (Porter, 1980). These factors have been considered in chapter 7 and sections 8.1 and 8.2. This section will consider the other factors which companies explicitly said they used as acquisition decision criteria. The most commonly cited factors are shown in table 8.4.

Table 8.4 **Non-Capital Budgeting Techniques Cited as Decision Criteria by More Than 3 Companies**

	Number of Companies	Percentage of companies interviewed
Impact on Balance Sheet	14	27.5
Asset value	9	17.6
Target Profits	9	17.6
Target's Management	8	15.7
Condition and safety of Plant	5	9.8
Growth Potential	4	7.8
Ability to add Value	4	7.8
Sales Slippage[10]	4	7.8
Risk	4	7.8
Technology	4	7.8
Customer Access	3	5.9
Product	3	
Total Number of Other Factors Mentioned	92	
Average Number of Other Factors Mentioned Explicitly as Criteria	1.80	
Average Number of Factors Mentioned Explicitly as Criteria	4.28	

Notable for its position at the bottom of the list is the product[11] made by the target company, it was explicitly mentioned by only 3 companies. This may be an understatement of its importance as 6 of the sampled companies were purchasing operations which produced standardised commodities, such as oil. Even if these companies are excluded 42 out of 45 companies did not include the target company's product explicitly in their acquisition decision criteria. This would be the position the finance literature would propose, that all information should be included in the NPV analysis and therefore should not be considered separately

Another factor notable for its absence was any reference to the work force. The abilities of the targets management was mentioned 9 times and the ability of the operating unit that the target was to be merged with only once. It therefore seems that companies were assuming that the skills of the work force had little impact on the value of an organisation or that the work force could be changed at little cost. The abilities of management to effectively use the assets at its disposal, however, were more important.

Table 8.4 includes 2 further factors which are purely financial in nature; impact on the balance sheet, and the target's profits. Of the 92 items stated as decision criteria, excluding the 5 capital budgeting techniques proposed by the finance textbooks, 23 were basically financial in nature rather than factors driving the financial measures.

Asset value could also be viewed as an accounting measure. Some companies implied, however, that they included within this the process of conducting a detailed inventory of the condition of assets, and therefore their productive ability.

Factors which relate to how the target companies produced cash flows were mentioned 69 times, an average of 1.80 criteria per company. This compares to the 128 times in total that IRR, NPV, ARR, EPS and payback were mentioned, an average of 2.5 criteria per company. It therefore seems that financial criteria, in the final decision making process, are far more important than the factors which allow a company to generate returns.

The non financial factors may have been subsumed into the financial analysis. It is however, interesting to note that only 4 people interviewed came from an engineering or production background.

The last 4 sections have examined the level of use of capital budgeting techniques and other decision criteria for acquisition decisions in the sample frame. It has found that finance criteria dominated the process. Only 1 company did not use DCF or EPS. DCF techniques were used widely, commonly with other finance techniques. However, the method prescribed by the strictest interpretation of the finance literature i.e. to use only NPV, was rarely used. Payback though extensively used was rarely used as a criterion with less than 2 other techniques. Having examined what criteria were used, the writer will now examine how they were applied.

8.5 The Application of Decision Criteria

The application of the financial decision criteria has many aspects. This thesis will focus on the use of fixed hurdle rates and the level of standardisation in the application of criteria.

8.5.1 Fixed Hurdle Rates

The finance literature proposes that for each decision made using discounted cash flow measures a specific discount rate reflecting the individual risk of that project should be developed.(Higson 1991:289, Schloser, 1992:319). The evidence presented in Table 8.5, however, suggests that the majority of companies developed fixed hurdle rates for financial criteria rather than developing specific discount rates for each project. This technique is supported for small projects by the finance literature (Higson,1991 :289) as the cost of developing a specific rate for a project may be greater than the benefit of developing a specific rate. This is unlikely to be the case in acquisitions.

The interviews, however, suggest that the situation is far less clear cut than implied by the answers to the closed question: Are any of these criteria subject to fixed hurdle rates ? That is, there are shades of grey on what is nominally a clear cut situation.

Table 8.5 **Use of Fixed Hurdle Rates**

	Number of Companies	Percentage of Sample	Percentage of companies which answered question
Companies that used fixed hurdle rates in specific case discussed[12]	31	59.6	68.9
Companies that normally used fixed hurdle rates[13]	32	62.7	71.1

Several groups emerged in how they applied and used their hurdle rates. The differences between groups are not wide in some cases, but are gaps in a continuum that stretches from total rigid enforcement to hurdle rates being vague targets.

Two companies stated they had hurdle rates but they were really targets to be achieved:

> 'We try to see that we can get to the 20 per cent return on our capital invested, including goodwill, by the end of the third year. And if we can't, how long after.'
>
> 'They are not as fixed as they were. They are all reasonably flexible now. It was just while we were trying to regain the confidence of the city. Then they were fairly rigid.'

Two companies maintained their hurdle rates but the period of measurement varied or application varied creating flexibility:

> 'Yes and no. We are really looking for a minimum of fifteen per cent compound return on investment, over the period we are measuring.' ' The reason the period varies is that the lower the quality of the business.... the less predictable the long term.'
>
> 'If something has been applied in a flexible way, you may have a fixed hurdle rate but if you apply it in a slightly flexible way then they are not fixed any more.'

Eleven companies had hurdle rates, which were flexible depending on strategy and subjective factors:

'The hurdle rates themselves are standard, but if it fails or passed 1 or 2 or all 3, then that doesn't mean it is the end of the project, if there is an issue a flag pops up.'

'The group has a hurdle rate for capital expenditure proposals and acquisitions but by its very nature exceptions are made.'

'On IRR we always try to have a minimum hurdle rate but there will be times when that is bust.'

'Yes, but there would invariably be exceptions.'

Five companies had hurdle rates fixed in terms of rules:

'We have a group rate and then we put in a local inflation rate and then we would put in a specific risk factor.'

'What you have is a real discount rate, and then the countries are split into low, moderate and high risk, and then there is a commercial risk which is divided by the type of project. All acquisitions are by definition above average commercial risk and so you add on 5.'

One division of a larger company thought there was an unofficial hurdle rate but there was no official hurdle rate:

'Officially no is perhaps what I should say to that. But I think there are perceived hurdle rates that we as a subsidiary feel we are working against, and we tend to filter out those projects that don't meet those rates.'

One company, which regularly acquires small companies in a specific area, said it had fixed hurdle rates for its divisions. It, however, thought that it varied its discount rate to take account of risk in larger acquisitions. It, though, had only conducted 2 large acquisitions over the last few years.

Interviewee: 'We would set the internal rate of return for the DCF calculation, that would be set centrally depending on the nature of the business and the risks involved'

Researcher: ' So each operation would have a fixed discount rate which it could use in evaluating properties ?'

Interviewee: ' Yes'

But when discussing larger projects,

Interviewee: 'The discount rate will vary according to the type of project but in effect that is the hurdle rate '

One company had different fixed rates for its 2 divisions:

'We are looking for a lower return from *our retail operations*[14], because it is less risky'

Eight companies had hurdle rates which were fixed and which they claimed had no flexibility in them:

' No dilution to earnings per share and an increase in net assets, they are fundamental to the group and have been, right from the word go.'

For 8 [15] companies there was either insufficient data or it was unclear how rigidly they were applying their hurdle rates.

It is impossible, however, to quantify exactly how rigidly companies were applying hurdle rates without using participant observation for all acquisitions a company has done. The degrees of grey being discerned may be the result of different interviewees viewing rigidity in different ways.

It is clear, however, that a maximum of only 8 companies out of the 31 for which clear data was available used fixed hurdle rates which were not subject to being over ridden by other factors.

Companies may also vary in their application of hurdle rates between operating units and the centre and over time. One company which stated it no longer had a fixed hurdle rate stated that it did at the time the specific acquisition discussed was

conducted. At 1 organisation where 3 interviews were conducted in different parts of the organisation the responses on fixed hurdle rates differed.

That is, some companies had hurdle rates which would not result in rejection of a potential acquisition, others where it would, and a further group where it would depend.

It should be noted that the 2 measures of use of fixed hurdle rates were highly correlated with each other (Chi-squared test result P= 0004, Degrees of Freedom =1, Sample size =41). This may indicate that the specific cases described were not unusual in their level of use of fixed hurdle rates. It could be, however, that managers were describing what happened in a specific case when talking about generalities. It is impossible to determine this without using observation based methods. The consistency in the data might also be taken as reassurance that it is reasonably internally reliable. Both measures showed high levels of use of fixed hurdle rates which cannot account for specific risk in an individual project.

The frequency with which hurdle rates were changed appeared to be relatively low ,' they have been in place for quite some time.' But data on this was not consistently collected. Therefore no conclusions can be drawn on this.

Data on which factors were subjected to hurdle rates, however, was collected.

8.5.2 Criteria Subject to Fixed Hurdle Rates

Table 8.6 shows the criteria subject to fixed hurdle rates. It seems to reinforce the points noted in sections 8.1 to 8.3.

A) That IRR is the dominant criterion at many companies and not the theoretically correct NPV, as it is the criterion for which hurdle are rates are most commonly set.

B) Payback although widely used is not a dominant criterion It is rarely subject to a fixed hurdle rate

C) DCF criteria are commonly used but are not the only criteria used An equal number of hurdle rates were set in terms of ARR, EPS and Payback as NPV and IRR One other point is notable, that ARR is still important enough for 9 companies to set fixed hurdle rates for it. That is, although ARR is the least used of the 5 capital budgeting techniques considered by the finance literature it is still of significance at some companies.

Table 8.6 **Criteria Subject to Fixed Hurdle Rates**

Criteria	Number of Companies	Per cent of Sample
IRR	17	33 3
ARR	9	17 6
EPS Dilution	8	15 7
NPV	5	9 8
Payback	5	9 8

The material on which criteria are subject to fixed hurdle rates seems to reinforce the data on which criteria were used, in particular the diversity of criteria used, and that few companies used NPV in comparison to IRR. The data on hurdle rates in general seems to imply that although companies are using them, their use is not as high as the answers to the closed question would imply. The level of use of fixed hurdle rates is further lowered by variable application of methods which the researcher will examine next.

8.5.3 Flexibility of Application of Criteria

The flexible application of criteria hinted at in the previous 2 sections is more clearly shown in table 8.7. Most companies do vary the way they apply the decision criteria they use. One company stated 'if it is not strategically important then it will be rigorously applied, if it is strategically important then we will sort of review it on that basis.' That is, 2 projects with nominally the same returns which pass the hurdle rates may be the product of very different approaches because 1 was viewed as being of strategic importance. A large number (18 or 40 per cent), however, claimed to follow a standardised approach.

Table 8.7 **Standardisation of Method of Applying Criteria**

The way criteria are applied and measured is:	Number of Companies	Percentage of Sample	Percentage of companies which answered question
Standardised for all acquisitions	18	34.6	40
Standardised but exceptions are made or usually the same	22	42.3	48.9
Varies from case to case	5	9.6	11.1

It is unclear what companies were including in this response. If they were focusing on the financial analysis, the finance literature would support a standardised approach. If, however, the companies were focusing on the factors which underlie the cash flow analysis these should be dealt with individually for each case.

A further issue of variability was the time span covered, some companies only looked 5 years ahead;

'most of the models were only 5 years but there was a horizon value.'

Some looked at only 3 years:

Interviewer:' Before you bought it, how far out did you look ? '

Interviewee: 'It would be 3 years.'

And one: 'We looked at the period, of about 18 months, when both businesses were fully integrated and operating at their most effective .'

One company however looked at the whole 25 year life span of an asset although

' after 6 years and thereafter it was forecasting and best guess, whatever you want to call it'

and for some companies the modelling period has changed: 'I think, it has changed since but then we tried to model through to 20 years ....We model to 10 years and stick on some kind of perpetuity.'

Most companies, however, appeared to be relatively consistent over how long they looked, but a similar caveat to the use of fixed hurdle rates must apply. This is what companies said they did. Some were vague: 'the fact of the matter was we did 10 years at most.' The mean period over which companies that used DCF developed forecasts was 9.667 years, the median was 8.5 but the range was from 3 years to 25. This variation in time scale is particularly significant if no residual value is used, for it could have a marked effect on a net present value, especially in a low risk sector where the discount factor used should be small. This variation raises the question as to what these cash flows were based on.

8.5.4 Basis of Cash Flows

The factors underlying the cash flows on which analysis was conducted varied. Of the 41 companies which discussed where the information came from to generate the cash flows in models: Nineteen companies mentioned looking at the wider economy as well as the industry. The level of importance the wider economy was given varied, as illustrated below. Seventeen companies did not explicitly mention factors outside their industry as being considered. Five said their analysis centred on industry factors. Of the above, 2 stated they examined individual customer demand.

These distinctions though are a case of chopping a continuum. The gaps are small and it is unclear whether those companies that did not mention wider factors as influencing the cash flows, had not already conducted detailed analysis of the factors affecting the industry in which they operated, to generate budgets and strategic plans for current operations. It is also unclear whether the companies that examine demand on a customer by customer basis were incorporating a wider economic view into this.

One company said:' Definitely industry dynamics, I think you can't ignore the general environment as far as recession is concerned because it does have a bearing, but it was more industry specific and at times people were playing around with (*Product blend*) and so on so.'

Another: 'We focused largely on industry trends and checked those against economic trends.'

A third:' First of all there has been a volume decline for at least 3 ,4 years and the basis of our proposition was that we could revise the volume decline by advertising and marketing programmes, marketing innovations. The sellers had neglected it, they had decided that about 2 or 3 years ago that they weren't interested.

A fourth: Interviewer: 'How did you develop any projections that were used for your IRR.'

Interviewee: 'We used the local profit centre management and then the knowledge of the industry . We rely on them, they have got to own and run it at the end of the day . They have the industry experience.'

Interviewer: 'Would that have been generated from their annual budget. That is would you use that as a starting point ?'

Interviewee:' We know what the operating parameters are of this type of business.'

Interviewer: 'Were these projections developed on an industry basis or did you consider any wider economic factors in them ?'

Interviewee: 'Yes, you are concerned with what the American economy is doing.'

Interviewer: 'Is that an important factor ?'

Interviewee: 'We are not going to invest in an economy where the bottom has just fallen out of it.'

A fifth company stated :' Various things, obviously, how the economy is going, can the competitive position of this company be sustained, the investment needs to develop it.'

For another, political concerns were important:

Interviewee: 'If the market wasn't going to develop then it was going nowhere but then you have only got to get the market to grow 50% via scrubbing[16] and its a big market. This market has to develop.... It is substitution and market growth'

Interviewer:' Okay. Did you consider wider, firstly, economic variables and secondly environmental variables in this?'

Interviewee:' In our evaluations we were conscious that the environmental issues were going to get stronger and, therefore, would pressure on customer to switch to this other technology.'

Interviewer:' So political issues ?'

Interviewee:' Political '

Interviewer: 'Political issues in terms of environmental legislation and what about the environmental groups who have major influence on politicians in passing legislation?

Interviewee:' That would be important in helping us turn customers round .'

Interviewer:' So that was looked at, the likelihood of environmental legislation on the specific markets.'

Interviewee:' Yes, We looked at how that was going '

For some companies, the wider economic situation was not seen as relevant: 'No, the main factors driving those were, because it was a flat market ,the main factors were agricultural rates of inflation, and our ability to improve the prospects of the company '

For 2 companies, it was how individual customers would react: 'You look at it on a customer, by customer basis There was basically existing customers and new customers and obviously you look at existing customers, that is relatively easy, they have an association, it is a case of saying whether they are going to buy the same amount as last year New customers are much more difficult because you have got to guess whether and when they are going to come on board and how many units they are going to take'

The analysis of the wider economy was in some companies not particularly quantitative in nature 'The people in the marketing part of the central European group, went into a darkened room, looked into the German economy looked into the customers on the system, and just discussed it They considered the historical trends of each customer by volume and took a view by customer, on what the growth for each customer would be There are very few there are only about 10 major customers.'

That is, some companies said they were only looking at the industry, some didn't say they were looking outside their industry, and some said that they incorporated factors other than industry dynamics in their assumptions and forecasts.

One company stated: Interviewer: 'You didn't include wider the economic situation in there ?'

Interviewee:' Yes by inference, because of our knowledge of our business, yes, but without necessarily going out and pulling specific information.'

That is it did not specifically look but thought it had already incorporated outside effects in its industry assumptions

Another company had a more clearly developed picture of the country it was investing in

Interviewer ' Did you develop a macro-economical view and incorporate that at all '

Interviewee' No we already had a macro-economic view of the country and the market concerned '

Interviewer ' So was that incorporated into the model.'

Interviewee: ' Yes.'

No statistics were carried out on the divisions used above as this would imply clear cut categories which in many cases were blurred at the edges. The picture is unclear. Some companies built detailed views of the economies they were investing in. Others only said they examined industry dynamics.

8.5.5 Section Summary

This section has examined the application of financial decision criteria and found that although many companies profess to having fixed hurdle rates for a variety of reasons, including deliberate flexibility and the method of application, these rates are not that rigid. Few companies described detailed methods for developing discount rates which would take account of risk in a rigorous and consistent fashion. Five described rule based approaches for this. Companies were found to generate cash flow models for a variety of periods for 3 to 25 years. Companies also based these cash flows on a combination of industry and wider economic assumptions. The incorporation of the latter ranging from none to a fairly significant factor in the model.

8.6 Chapter Summary

This chapter has examined the decision criteria used in the acquisition process. It has concluded that although most companies used DCF techniques, most also used

payback, ARR and EPS as well as other non financial criteria. Few companies considered the product made to be an important criteria in its own right. Fixed hurdle rates were commonly used by companies. Further examination of this showed that these in some cases were fairly flexible.

The next chapter will consider whether the use of any of the financial techniques this chapter has found that companies use, had an effect on acquisition success. It will focus on whether DCF techniques which are theoretically superior to other techniques produce improved success levels in practice.

Footnotes

[1] Not value maximising.

[2] Only 43 companies stated whether DCF was in their three key criteria.

[3] 8 companies who used DCF did not state their 3 key criteria.

[4] That is it did not use Payback, ARR, IRR, NPV or EPS.

[5] Exact significance 7.710 per cent. This is the result of a Fisher exact test as the minimum expected frequency was 3.5.

[6] 30.3 percent of companies that used EPS, used it on its own or in conjunction with only one other capital budgeting technique.

22.7 per cent of companies that used ARR measures used it in conjunction with only one other capital budgeting technique.

28.1 per cent of companies that used IRR measures used it in conjunction with only one other capital budgeting technique.

25.9 per cent that used NPV used it in conjunction with only one other capital budgeting technique.

[7] P= 0 .880205. This chi-squared test compared companies who used payback plus more than one other criteria to those that used more than one criteria excluding payback. That is did companies using payback use more capital budgeting techniques excluding payback than the group that did not use payback.

[8] It should be noted that no distinction is made here between use of discounted payback or simple payback as data was not specifically collected on this and is therefore incomplete.

[9] Pike (1988) found that in 1988, 9 per cent used only NPV, 57 per cent used both IRR and NPV and 17 per cent used only IRR in 1985.

[10] Loss of sales resulting from purchase.

[11] Including services.

[12] Taken from description of how decision criteria were applied in specific case.

[13] Response to a direct closed question

[14] Specific type of retail operation was named but this has been removed to disguise the company.

[15] This gives thirty nine companies, who either said they had a specific hurdle rate when talking about normal behaviour or said they had applied a fixed hurdle rate when discussing a specific case, 24 who used a fixed hurdle rate normally and in the specific case discussed, eight who used it in either the specific case or normally, and seven for which a coding for only one of the two variables was possible.

[16] Process for cleaning gas emmisions into atmosphere.

CHAPTER 9 DECISION CRITERIA AND SUCCESS

9.0 Introduction

Chapter 8 examined which decision criteria companies used and how these were applied. It found that most companies were using DCF techniques but that they were also using ARR, Payback, and EPS, as well as non financial criteria.

Chapter 4 reviewed the finance literature. It concluded that finance theory proposes that all companies should use discounted cash flow (DCF) measures preferably net present value (NPV). But if necessary internal rate of return (IRR)could be used (Samuels, Wilkes and Brayshaw, 1990:162). Other measures are viewed as having serious shortcomings. The use of DCF techniques, therefore, should increase success levels, while the use of other criteria will reduce success levels as they will produce incorrect decisions[1]. The use of fixed hurdle rates in NPV calculations should reduce success levels, unless the project has no significant consequences to make the cost of developing a specific rate greater than the benefits.

This chapter will examine 3 main areas:

a) Whether the use of DCF techniques affects success.

b) How can these results be explained.

c) How did the use of criteria apart from discounted cash flow(DCF) techniques affect success, and what other factors were associated with the use of these criteria.

This will include the examination of the following hypotheses:

4:4) Use of discounted cash flow measures as decision criteria in acquisitions will increase success.

4:5) Use of NPV as a decision criterion will increase success rates.

4:6) The use of only NPV as a decision criterion will give an increased success level.

4:7) The use of fixed hurdle rates will lower success levels.

4:8) Larger companies in terms of sales will show an increased propensity to use discounted cash flow measures.

4:1) Use of payback as a decision criterion will reduce success.

4:2) Use of accounting rate of return as a decision criterion will reduce success.

4:3) Use of earnings per share as a decision criterion will reduce success.

9.1 Use of Discounted Cash Flow Techniques and Success

Chapter 8 established that the majority of companies interviewed used discounted cash flow (DCF) techniques as prescribed by the finance literature. The researcher will now look at whether DCF's theoretical superiority was translated into superior success levels. Table 9.1 shows that, the use of DCF techniques was not associated with significantly better performance.

One result in table 9.1 shows a negative relationship between DCF, being one of the three key criteria used, and the general success measure. This was significant at the 1 per cent level. The other tests, however, produced no significant relationships. The researcher, concluded that this 1 significant result, presented in table 9.1, was insufficient to support the hypothesis that: the use of discounted cash flow measures reduces success levels in acquisitions.

The variable, discounted cash flow was one of a company's three key criteria in the specific case discussed, was used to attempt to exclude companies which used DCF techniques but did not pay any attention to the results. Thus the researcher concluded

that DCF analysis does not seem to result in superior performance, contrary to the expectations of the finance literature That is, the evidence implies a rejection of the hypothesis:

4:4) The use of discounted cash flow measures as decision criteria in acquisitions will increase success.

Table 9.1 Results of Chi-Squared Tests between The Use of Discounted Cash Flow Measures and Success

	Minimum expected frequency[2]	Sample Size	Probability o Distribution Occurring by Chance
DCF Used and General Success Measure	4.0	38	.69280
DCF 1 of 3 Key Acquisition Criteria an General Success Measure[3]	7.0	37	.0042***-
DCF Used and First Specific Succes Measure[4]	1.4	30	.61106
DCF 1 of 3 Key Acquisition Criteria an First Specific Success Measure	4.0	30	.69561
DCF Used and Second Specific Succes Measure[5]	3.2	44	.45592
DCF 1 of 3 Key Acquisition Criteria an Second Specific Success Measure	5.4	38	.33082
All tests had 1 degree of freedom			
- Direction of Relationship Negative			
*** Significant at 1 per cent level			

There are several possible interpretations of the rejection of hypothesis **4:4)** based on the results in table 9.1:

1) The result is inaccurate,

2) DCF methods were not applied correctly,

3) Companies using NPV did produce superior results but companies using IRR did not because of its flaws and this reduced the overall success level of companies using DCF methods.

4) companies are using DCF techniques but the results are ignored in the decision making process

5) DCF is being used as a substitute for analysis and thus superior performance as a result of DCF being used is lost because of other changes in the acquisition decision process associated with it. That is :

Hypothesis 9:4, Companies which used discounted cash flow techniques are different from those that do not in such a way as to negate the effect of improved performance in acquisitions resulting from the use of DCF techniques.

The researcher will now examine each of these options in turn

9.1.1 Method Problems - Success Measure Bias

A possible methodological problem is that the success measure is systematically biased and in reality the companies using DCF were more successful but this is not captured in the success measure. That is, the result is not an accurate reflection of reality. A problem with the subjective measure used is that managers may have different expectations. If managers at companies which used DCF had consistently higher expectations of how their acquisitions would perform than managers at companies that did not use DCF analysis, this would produce results showing that companies using DCF analysis acquisition's performed less well than those of companies not using DCF, even if their performance was identical on a hypothetical neutral measure.

A possible cause of managers at companies using DCF having higher expectations is superior past performance. To examine if past success might have influenced the results, profitability (Pre-tax profits/Sales) for the last available set of accounts is presented to give a comparison of general performance between those companies that

used DCF and those that did not. Although this is a crude measure since it takes no account of the industry a company is operating in, and only covers 1 year, the researcher has no reason to believe that it is systematically biased. The results (Table 9.2) imply that the companies which used DCF did not have superior general performance. Therefore, the companies using discounted cash flow analysis should not have higher targets because of prior better general performance. Thus prior performance should not be an explanation of systematic lower assessment of success for same level of performance by companies which used DCF.

Table 9.2 **Results of Chi-Squared Tests between Use of Discounted Cash Flow Measures and Profitability**

DCF used and profitability[6] for last set of accounts divided at divided at :	Sample Size	Minimum Expected Frequency[7]	Probability of Distribution Occurring by Chance
6 per cent	50	1.8	1
8 per cent	50	3.6	1
10 per cent	50	4.0	.71306
DCF 1 of 3 Key Acquisition Criteria and profitability for last set of accounts divided at			
6 per cent	42	3.8	1
8 per cent	42	8.1	.4740
10 per cent	42	6.4	.7100
All tests had 1 degree of freedom			

No convenient method is available to examine if companies which use DCF had higher expectations because they used DCF. To overcome this problem another type of success measure could be used. But, as discussed in chapter 6, all other success measures have problems, which would have curtailed data collection.

9.1.2 Method Problems - Success Measure Sensitivity

A second possible explanation for the success measure not accurately capturing improved performance for companies using DCF within their acquisition process is because the sample size restricts the chi-squared tests to 2 cells by 2 cells, and therefore the measure loses sensitivity. To check the validity of the chi-squared tests, and check the results for sensitivity to the dividing points used, the test was conducted with the dividing point of the success measures varied. The results of the tests between DCF used and the general success measure, and DCF as one of a company's three key criteria and the general success measure, are presented in tables 9.3 and 9.4. The results of the tests with the other success measures are presented in appendix D, tables D.10 to D.13.

No test between DCF used and the first specific success measure were significant. Results presented in appendix D, table D.10.

No test between DCF used and the second specific success measure were significant. Results presented in appendix D, table D.12.

No test between DCF as one of a company's three key criteria for an acquisition decision and the first specific success measure were significant. Results presented in appendix D, table D.11.

No test between DCF as one of a company's three key criteria for an acquisition decision and the second specific success measure were significant. Results presented in appendix D, table D.13.

Table 9.3 Results of Chi-Squared Tests between DCF Used and Success

DCF used and general acquisition success measure, divided at:	Minimum expected frequency[8]	Probability of distribution occurring by chance
2.5	1.5	1
2.7	2.1	1
2.9	2.1	1
3	2.5	.69828
3.1	2.9	1
3.2	3.3	1
3.3	4	.69280
3.5	4	.69280
3.6	3.5	1
3.7	2.5	.23195
3.8	2.3	.19496
3.9	1.9	.07133* -
4.0	1.3	.09401* -
4.1	.9	.02565**-
All chi-squared tests had 1 degree of freedom and a sample size of 38.		

Table 9.4 Results of Chi-Squared Tests between DCF as One of a Company's Three Key Criteria and Success

DCF 1 of a company's 3 key acquisition decision criteria and general acquisition success measure, divided at:	Minimum expected frequency	Probability of distribution occurring by chance
3.0	4.2	.33693
3.1	5.2	.10777
3.2	6.1	.02565 ** -
3.3	7.0	.00421 *** -
3.4	7.0	.00421 *** -
3.5	7.0	.03508 ** -
3.6	6.1	.03606 ** -
3.7	5.6	.01353 ** -
3.8	5.2	.03392 ** -
3.9	4.2	.16048
All chi-squared tests had 1 degree of freedom and a sample size of 32		

Key

-	Correlation Direction negative
***	Significant at 1 per cent level
**	Significant at 5 per cent level

The tests between DCF as one of a company's three key criteria, and the general success measure, replicated the result achieved when the scale was divided at 3 4 to produce a dichotomous variable, although the significance levels are not as high Eight tests for different dividing lines of the success variable produced significant results This seems to suggest the result is fairly robust and implies that DCF is not only not producing superior results, but that it is associated with reduced general levels of success.

No other solution to improve the ability of the success measure to capture small changes resulting from the use of discounted cash flow analysis is available apart from conducting more interviews. This is not an option within this research. It, however, represents a future avenue for research in this area.

It could be argued that table 9.4 supports the perspective that companies which use discounted cash flow have higher targets. That is, if all companies' acquisitions on average performed the same, the negative correlation on the general success measure could be taken to indicate that those companies which use DCF have higher targets This argument is, however, tenuous as it assumes over the long term all acquisitions perform the same.

A further problem with the method used is that the researcher is reliant on the interviewee accurately recalling events.

9.1.3 Method Problems - Inaccurate Data

A possible problem associated with collecting data on DCF use is that companies may view using DCF as a desirable sign of being a professional company and therefore claim they were using it when they were not. To counteract this problem the researcher examined whether a company placed DCF in their three key decision criteria. This it must be hoped would be less likely to include spurious data as it was implied in the interview that the data was to be used as a success measure. In addition, several questions were asked on this topic in different parts of the interview. The problem of interviewees claiming one thing when actually doing another is almost impossible to counteract with any other means apart from asking multiple questions when collecting data on acquisitions. Observation as a data collection method is unlikely to gain access and access to written sources is unlikely until the acquisition is no longer perceived as being sensitive to the company or senior personnel. By this time, practice will probably have changed and no triangulation with interview sources will be possible because people have limited memory spans.

Therefore, although there are several problems with the methods used there does not appear to be sufficient evidence to support the hypothesis: **4:4) Use of discounted cash flow measures as decision criteria in acquisitions will increase success**. This leaves the option of rejecting the hypotheses as the evidence in table 9.2 implies. Which in turn leaves the problem of explaining how the theoretically superior method fails to produce superior results. Explanations proposed for this include:

A) The use of IRR, which has a number of problems, is negating any improvement in success occurring at companies using NPV.

B) DCF analysis is being carried out but ignored by decision makers.

C) DCF analysis was not being applied correctly.

D) The improvement in acquisition success resulting from using DCF was marginal and being swamped by other changes associated with using DCF analysis. The researcher will now examine each of these possibilities in turn

9.1.4 Use of IRR is Reducing Discounted Cash Flow Performance

Chapter 4 proposed 2 hypotheses which seem relevant to this view of the cause of DCF producing worse general performance, and no superior performance on the specific measures used in this research:

4:5 - Use of NPV as a decision criterion will increase success rates

4:6 - The use of only NPV as a decision criterion will give an increased level of success.

If NPV did give superior performance, and IRR did not because of its flaws, this would provide an explanation for the lack of superior performance by companies using DCF techniques. That is, the theoretically correct NPV is giving superior performance, but IRR is not and when combined no effect is detectable.

To examine the effect on success of companies using IRR and NPV they were divided into, A) those which used NPV and not IRR, and; B) those which used IRR and not NPV, these groups being mutually exclusive. They were also divided into; A) those which used NPV and , B) those which used IRR, which were not mutually exclusive.

The researcher could not test hypothesis **4:6** directly as only 4 companies only used NPV as a financial decision criteria. These all used other non financial criteria.

As a substitute the researcher tested the hypothesis that

9:1) The use of NPV and not IRR as a decision criterion will increase success levels.

The results of this are presented in table D.16 in appendix D. No results are significant. Hypothesis **9:1** was therefore rejected. The researcher thought this may be due to the very small minimum expected frequencies. To check this result the researcher examined the hypothesis that

9:2) The use of IRR and not NPV as a decision criterion will reduce success levels.

That is if it could not be shown that the use of NPV gave increased success, could it be shown that the use of IRR gave reduced levels of success. The results of testing this hypothesis with the second specific success measure are presented in table 9.5. The results for 4 divisions of the second specific success measure used were significant. The results of the tests with the general success measure and first specific success measure, which are not significant, are presented in table D.17 in appendix D.

No test between use of IRR and not NPV and the first specific success measure were significant.

No test between use of IRR and not NPV and the general success measure were significant.

Table 9.5 **Results of Chi-Squared Tests between IRR Used and not NPV in Acquisition Process and the Second Specific Success Measure**

IRR used and not NPV and second specific success measure divided at:	Minimum expected frequency	Probability of distribution occurring by chance
3	2.0	.08508 * -
3.1	2.9	.13056
3.2	2.9	.11149
3.3	3.7	.02555** -
3.4	3.4	.03188** -
3.5	4.2	.07213* -
3.6	4.6	.16011
3.7	5.4	.26566
3.8	4.4	.48244
3.9	3.7	.72624
4.0	2.9	1
Sample size 45 with 1 degree of freedom		
- Negative relationship		
** Significant at 5 per cent level	* Significant at 10 per cent level	

The researcher concluded that this was insufficient evidence to support the hypothesis:

9:2) The use of IRR and not NPV as a decision criterion will give a reduced level of success.

It does, however, indicate that IRR use may be a factor in negating DCF theoretical superiority.

The researcher, therefore, focused on hypothesis **4:5:**

The use of NPV as a decision criterion will give an increased level of success.

Table 9.6 presents evidence on this hypothesis. It shows that NPV is significantly negatively associated with 3 divisions of the general success measure. The researcher therefore rejected hypothesis **4:5.**

Examination of the related hypothesis that

9:3) Use of IRR as a decision criterion will give reduced success levels.

Did not produce any significant correlations

The results of testing this are presented in table D 14 in appendix D

The evidence thus implies that the hypothesis **4:5** cannot be accepted The evidence on the effect of the use of IRR and NPV on success is unclear Chi-squared tests on the relationship between the variables, A) Use of IRR and not NPV and, B) Use of NPV, and success produced significant negative relationships However, tests between, A) Use of NPV and not IRR and, B) Use of IRR, and success produced no significant results It is, therefore, an area which would benefit from the larger sample frame possible with a questionnaire approach. Unfortunately this, would be more vulnerable to people stating that they used DCF because, that is viewed as desirable

Table 9.6 Results of Chi-Squared Tests between NPV Used and Success

NPV Used and first specific success measure divided at :	Minimum expected frequency	Probability of distribution occurring by chance
3.5	3.7	1
3.6	4.2	.69439
3.7	5.2	.91935
3.8	5.6	.65400
3.9	6.5	.73210
4.0	5.6	.29564
4.1	5.6	.29564
4.2	5.1	.15631
4.3	5.1	.23598
Sample size 30 with 1 degree of freedom		

Table 9.6 Continued **Chi-Squared Tests on NPV Used and Success**

NPV used and general success measure divided at :	Minimum expected frequency	Probability of distribution occurring by chance
2.5	3.3	1
2.7	4.7	1
2.9	4.7	.84605
3.0	5.6	.8251
3.1	6.6	.67056
3.2	7.6	.29880
3.3	9	.19375
3.4	9	.19375
3.5	8.0	.20322
3.6	6.6	.35670
3.7	5.7	.35744
3.8	5.2	.19986
3.9	4.3	.05770 *-
4.0	2.9	.04633 ** -
4.1	2.8	.08283 * -
Sample size 30 with 1 degree of freedom		
NPV used and second specific success measure divided at :	Minimum expected frequency	Probability of distribution occurring by chance
3.0	3.6	.43468
3.1	5.3	.25819
3.2	5.3	.25819
3.3	6.7	.13756
3.4	7.1	.23649
3.5	7.5	.37144
3.6	8.4	.12061
3.7	9.8	.18231
3.8	8	.22067
3.9	6.7	.67137
4.0	5.3	.82110
Sample size 45 with 1 degree of freedom		
- Direction of relationship negative		
** Significant at 5 per cent level	* Significant at 10 per cent level	

9.1.5 The Decision Makers are Ignoring the Results of DCF Analysis

The use of other financial decision criteria in addition to DCF implies that DCF analysis is not being exclusively focused on The small numbers (6)[9] of companies that used only DCF made tests impossible as to whether they had superior performance to the other companies. It could be argued that although DCF analysis is being used its results are being compromised when its conclusions disagree with other tests (EPS, ARR and Payback) which are more intuitive (Higson 1984:146). It is precisely these situations where these other measures are not producing the correct (value maximising) answer. That is, although the analysis was carried out, its results are viewed as only 1 of many factors Moreover the results are being over-ridden in certain situations, which may result in poor performing acquisitions being made The qualitative evidence seems to support this argument.

One company provided a case where the manager being interviewed thought the board had already made its decision and the analysis was ignored :

> 'The valuation process went through the normal routine things. ... it would be wrong to say they were ignored because the people who made the decision would say they weren't ignored, they were very much part of the thinking, but in terms of controlling the decision they didn't have a significant bearing'
>
> 'The fundamental criteria was that we wanted the brand.'

One interviewee at a company which used DCF thought that:

> 'In terms of presenting it to senior management, senior management are confident and familiar with return on investment and confident with that term, and they are not that familiar with internal rate of return.'

Another company that :

> 'Normally I would say you must be able to capture everything in the numbers otherwise, if you do things for quote strategic reasons then you will make a hash

of it. But I think that in some cases you can make the models make the right answer and it can be very difficult to justify the way in which those numbers were derived '

'It is no good making NPV positive investments if they don't contribute to earnings'

'Ultimately if the chairman jumps up and down and says we are doing it, we are doing it.'

' I think more important to us would be contribution to earnings '

That is, although DCF calculations were carried out, senior managers, in some cases are focusing on other factors when making decisions. A third possible explanation for the lack of greater success by companies using discounted cash flow techniques is that they did not apply them correctly.

9.1.6 Application of Discounted Cash Flow Methods, Fixed Hurdle Rates

The presence of fixed discount rates for criteria discussed in section 8.5.1 implies that some companies are not applying discounted cash flow measures correctly in some cases (Schlosser 1992:319). That is, the rates used do not reflect the risk for the individual project. The only exceptions to this should be, A) where an investment is so small that the cost of developing a specific rate is greater than the benefit of improved decision making, or B) the company only makes acquisitions in a very narrow area such that the risk levels are always the same. Some companies were developing specific rates using rules, others tailoring them to specific cases. However, some were using fixed hurdle rates and including flexibility for reasons which do not specifically relate to the risk involved, as the finance literature would propose. Only 5 companies

described a process whereby a discount rate was individually tailored to a specific project using established procedures, to take account of country and sector risk for each part of an acquisition

Table 9 7 shows that the use of fixed hurdle rates was associated with the presence of discounted cash flow techniques as one of a company's three key decision criteria Therefore companies which were using discounted cash flow techniques were also more likely to use a method which it was hypothesised, in chapter 4, would reduce success

Table 9.7 Results of Chi-Squared Tests between DCF Used by A Company and Fixed Hurdle Rates

DCF used and :	Sample Size	Probability of Distribution Occurring by Chance	Minimum expected frequency	Direction of Correlation
Use of fixed hurdle rates in specific case	44	.20890	2.4	
Use of fixed hurdle rate normally	38	.41127	2.6	
DCF one of a company's three key criteria and :				
Use of fixed hurdle rates in specific case	38	.03674**	4.9	Positive
Use of fixed hurdle rate normally	38	.03674**	4 9	Positive
All tests had 1 degree of Freedom				

Hypothesis 4:7 : The use of fixed hurdle rates will lower success levels.

The results of testing this hypothesis are presented in tables 9 8 to 9 10

Table 9.8 **Results of Chi-Squared Tests between The Use of Fixed Hurdle Rates In General Case and First Specific Success Measure**

Use of Fixed Hurdle Rates in general case and first specific success measure [10] divided at	Probability of Distribution Occurring by Chance	Minimum expected frequency
3.5	1	1.7
3 6	1	1 9
3 7	1	2.4
3 8	66798	2 7
3 9	1	2 3
4 0	19039	2 7
4 1	19039	2.7
4.2	19039	2.7
4 3	19039	2.7
4 4	06218* +	2.2
Sample size 26 with 1 degree of freedom + Positive relationship		

Table 9.9 **Results of Chi-Squared Tests between The Use of Fixed Hurdle Rates in General in Acquisitions and Second Specific Success Measure**

Use of Fixed Hurdle Rates in general in acquisitions and Second specific success measure divided at:	Probability of Distribution Occurring by Chance	Minimum expected frequency
3	1	2.4
3 1	72462	3 6
3 2	72462	3.6
3 3	47726	4 5
3 4	24932	4 6
3 5	14272	5 1
3 6	06211* -	5 7
3 7	07136* -	5 4
3 8	72009	4 2
3 9	1	3.6
4 0	69689	3 6
Sample size 40 with 1 degree of freedom		
* Significant at 10 per cent level		
- Negative relationship		

Table 9.10 **Results of Chi-Squared Tests between The Use of Fixed Hurdle Rates in General and General Success measure**

Use of fixed hurdle rates in general in acquisitions and general success measure divided at	Probability of Distribution Occurring by Chance	Minimum expected frequency
2.5	1	2
2.7	.68578	2.8
2.9	.68578	2.8
3.0	.44698	3.1
3.1	.43401	3.4
3.2	.70412	4
3.3	.72333	4.6
3.4	1	4.6
3.5	1	4.6
3.6	1	4
3.7	.70621	3.4
3.8	1	3.1
3.9	1	2.6
Sample size 35 with 1 degree of freedom		

No chi-squared tests between the use of fixed hurdle rates in a specific case and first specific success measure were significant.

No chi-squared tests between the use of fixed hurdle rates in a specific case and second specific success measure were significant.

Three chi-squared tests between the use of fixed hurdle rates in a specific case and general success measure were significant. The use of a fixed hurdle rate in a specific case was negatively related to the general success measure.

The evidence presented in the tables 9.8 to 9.10 seems to imply rejection of the hypotheses **4:7** for there general use. The chi-squared tests do show 2 negative

relationship in which are significant at the 10 per cent level, for 2 divisions of the second specific success measure and use of fixed hurdle rates in general. There is, however, also one significant positive relationship between the use of fixed hurdle rates in general and the first specific success measure.

There are 3 significant relationships between the use of fixed hurdle rates in the specific case and the general success measure. The researcher however concluded that this was insufficient evidence to accept hypothesis **4:7**. This relationship may be contributing to the loss of the theoretical advantage of DCF analysis when it is translated into practice, but it does not appear to be a major factor.

It was not possible to include the different groupings based on how rigidly fixed hurdle rates were applied that were generated in section 8.4.1, because of the sample size[11]. This may explain the limited evidence supporting the hypothesis. That is, although companies are claiming the existence of fixed hurdle rates it is only the group that are rigidly enforcing them that are suffering a disadvantage.

A second explanation is that some companies can adequately account for risk when using a fixed hurdle rate because all projects they undertake have very similar levels of risk.

A third explanation is that the marginal errors in the hurdle rates are small because most organisations operate in low inflation countries in established industries. The variation in discount rates to accurately reflect this is therefore relatively small compared with other potential changes.

9.1.7 Application of Discounted Cash Flow Measures and Variable Application

A further factor which may reduce the effectiveness of DCF is the variability in application discussed in section 8.5.3. That is, to allow projects which would otherwise not pass hurdle rates to go ahead, because of other factors, methods are applied less rigorously: ' if it is not strategically important then it will be rigorously applied, if it is strategically important then we will then review it on that basis '

Benefits of using discounted cash flow analysis may therefore be lost because incorrect discount rates are being used and the methods applied in an inconsistent fashion. There was, however, no correlation between the use of standardised procedures and DCF analysis.[12] The researcher examined the period for which companies developed cash flow forecasts. There was a strong correlation between DCF as one of a company's three key criteria and cash flows projections being carried out for longer periods [13] The development of cash flow projections for longer periods, however, was not significantly correlated with success.[14]

A further possible reason for the lack of greater success at companies using discounted cash flow analysis is that the benefits may be swamped by other differences that are associated with using DCF techniques. That is, there are other differences between the companies which used DCF and those that did not which are so great that these differences are equal to the gains in acquisition performance of using DCF techniques. This hypothesis that companies that used DCF are fundamentally different will be explored in section 9.1.8.

9.1.8 Use of DCF and Size of Company

Section 9 1 provided the hypothesis that: **Companies which used discounted cash flow techniques are different from those that do not in such a way as to negate the effect of improved performance in acquisitions resulting from the use of DCF techniques.** Chapter 4 provided a more specific hypothesis which seems relevant to this, hypothesis **4:8 : The larger the company the greater the use of discounted cash flow measures.**

Table 9 11 presents evidence on this hypothesis.

1 chi-squared test between DCF used and sales was significant.

2 chi-squared tests between DCF used and profits were significant.

These were positive in nature.

Results of these tests are presented in Table D.18 in appendix D.

The evidence presented in table 9.11 supports hypothesis **4:8**, specifically that the larger the company the greater the probability that it included discounted cash flow techniques in its 3 key criteria. The evidence on the relationship that the greater the size of a company in terms of pre-tax profits and sales the greater the probability that it used DCF techniques was less clear cut[15]. However, these test results, in table 9.11, support the view that companies that used discounted cash flow analysis are significantly larger than those that do not.

Table 9.11 **Results of Chi-Squared Tests between DCF Included in a Company's 3 Key Criteria and Measures of Company Size**

DCF included in a company's 3 key criteria and	Sample Size	Minimum expected frequency	Probability of Distribution Occurring by Chance
Sales for last set of accounts split at 1 billion pounds	43	6.7	.00485*** +
Sales for last set of accounts split at 1.5 billion pounds	43	7.3	.00275*** +
Sales for last set of accounts split at 2 billion pounds	43	9.3	.00857*** +
Sales for last set of accounts split at 2.5 billion pounds	43	8.1	.04897** +
Sales for last set of accounts split at 3 billion pounds	43	7.5	.11468
Pre-tax profits for last set of accounts split at 100 million pounds	42	7.7	.03843** +
Pre-tax profits for last set of accounts split at 200 million pounds	42	6.9	.01326** +
Pre-tax profits for last set of accounts split at 300 million pounds	42	3.9	.25781

All tests had 1 degree of freedom

\+ Direction of relationship positive

***Significant at 1 per cent level

** Significant at 5 per cent level

* Significant at 10 per cent level

This result is perhaps surprising given that all the companies bar 1, in the sample frame, had sales greater than 200 million pounds. It does, however, provide a difference associated with companies that used DCF that might have the effect of

negating any improvement in acquisition success because they used DCF. Three of the Kendall rank correlations in table 9.12 examining whether the acquisitions by larger companies produced lower success levels are significant. This implies size is a possible explanation for the poor performance of companies using DCF techniques.

To examine if a relationship was being effected by greater DCF use in larger companies the researcher divided the sample into companies who used DCF and those that did not and examined the relationship between size and success in the former group. There were 4 significant relationships between, sales for the last three sets of published accounts, and the success measures used, as shown in table 9.12. The correlations were negative in direction. Therefore, although the larger companies have a greater probability of having used discounted cash flow techniques as 1 of their 3 key criteria, the size of a company is significantly negatively related to the level of success it recorded on the 3 scales used in this research. This relationship between size and success holds if use of DCF is standardised for. That is it does not appear to be a product of DCF use. This therefore could be a factor in explaining why companies which used discounted cash flow techniques did not perform better than, companies that did not use them.

This leaves the wider hypothesis (**hypothesis 9:4**). **Companies which used discounted cash flow techniques are different from those that do not in such a way as to negate the effect of improved performance in acquisitions resulting from the use of DCF techniques.**

Table 9.12 Kendall Rank Correlations between Sales and Success

	General Success Measure	Specific Success Measure 1	Specific Success Measure 2
Sample Size	37	30	45
Sales for last set of accounts	-.1733	00093	- 1809*
Sales in previous years set of accounts	-.1763	0	- 1667
Sales in anti-penultimate set of accounts	- 2336 **	-.0513	- 2053**
	General Success Measure	Specific Success Measure 1	Specific Success Measure 2
Sample Size	30	26	36
Sales for companies who used DCF for last set of accounts	-.2035	-.0781	- 2620**
Sales for companies who used DCF in previous years set of accounts	-.2081	-.0650	-.2588**
Sales for companies who used DCF in anti-penultimate set of accounts	- 2497 *	-.1219	- 2907**

** Significant at 5 per cent level * Significant at 10 per cent level

Note - Kendall rank correlation coefficients presented

9.1.9 DCF Use and Other Process Factors

To examine if there were any relationships between whether DCF techniques were used, and whether it was 1 of a companies 3 key criteria, and other process factors, chi-squared tests were conducted on all other variables collected which could be turned into categorical variables. Tables 9.13 and 9.14 report the significant relationships resulting from these chi-squared tests.

Table 9.13 Results of Chi-Squared Tests between Discounted Cash Flow Analysis in a Company's 3 Key Criteria and Other Factors

Discounted cash flow analysis 1 of a company's 3 key criteria and		Sample Size	Minimum Expected Frequency	Probability of Distribution Occurring by Chance	Direction of Correlation
Relative size split at:	5 per cent	43	6.3	.02980**	Negative
	2 per cent		8.4	.13856	
Company has own corporate information library		40	6.0	.04083**	Positive
Highest number of acquisitions conducted in any 1 year over last 5 years split at[16]:	4.5	40	7.2	.01369**	Negative
	6		6.3	.01368**	
Median number of acquisitions conducted in last 5 years split at 3.3		40	8.1	.04766**	Negative
Total number of acquisitions in last 5 years split at	13.5	39	6.9	.00711***	Negative
	12		6.9	.05362*	
	10		6.9	.05362*	
	9		6.9	.05362*	
Total number of acquisitions divided by sales split at .011		38	6.7	.00041***	Negative
Man weeks work spent on acquisition split at	40	40	7.6	.03126**	Positive
	28 and 75		5.5	.04012**	
	30 and 90		5.1	.05446**	
Source of acquisition, internal or external		39	7.4	.02636**	♦
Use of ARR		43	8.8	.05151*	Negative
Use of Payback		43	8.4	.80687	
Use of EPS		43	7.1	.59674	
Geographic limits to search		38	7.6	.1111	♣
Access to targets internal information		39	7.8	.1629	♠

♦	External idea correlated with DCF being one of a company's 3 key criteria
♣	Companies with no explicit limits to the geographic area they searched for acquisitions were more likely to include DCF in their 3 key criteria
♠	No access associated with DCF as one a company's 3 key criteria
***	Significant at 1 per cent level
**	Significant at 5 per cent level
*	Significant at 10 per cent level

Table 9.14 **Results of Chi-Squared Tests between Discounted Cash Flow AnalysisUsed by A Company and Other Factors**

Discounted cash flow used and :		Sample Size	Probability of Distribution Occurring by Chance	Minimum expected frequency	Direction of Correlation
Relative size split at:	5 per cent 2 per cent	50	.27677 .47977	3.4 4.4	
Company has corporate information library		48	.04404**	3	Positive
Highest number of acquisitions conducted in a year over last 5 years split at :	6 4.5	47	.13571 .30643	3.6 4.5	
Median number of acquisitions conducted in last 5 years divided at 3.3		47	.97535	4.0	
Total number of acquisitions in last 5 years split at	13.5 12 10 9	46	.46229 1 1 1	3.7 3.7 3.7 3.7	
Total Number of acquisitions in last 5 years divided by sales split at .011		44	.06441*	4.1	Negative
Man weeks work spent on acquisitions split at: 40		49	.46053	3.8	
Source of acquisition, Internal or external		46	1	4	
Use of ARR		51	.29521	4.3	
Use of Payback		51	.30043	4.7	
Use of EPS		51	.07710*	3.5	Negative
Report Length		50	.01357**	4.6	Negative
Geographic limits to search		45	.21420	3.1	
Access to targets internal information		46	.29221	4.3	
** Significant at 5 per cent level		* Significant at 10 per cent level			

The small number of variables statistically significant with the variable DCF used, is probably a product of the low minimum expected frequencies. Within the factors that had significant correlations with the variable, discounted cash flow as one of a company's three key criteria, 2 groups of factors appear to exist:

A) Those variables which appear to be related to size; the company has a corporate library, and the relative size of an acquisition.

B) Those which reflect the number of transactions a company has conducted in the last 5 years.

This leaves 3 factors correlated with DCF as one of a company's three key criteria which do not fit into these 2 groups: amount of work put into a review, source of the acquisition, and the use of accounting rates of return.

9.1.10 Discounted Cash Flow Use and Other Process Factors Linked to size

The correlation between relative size and DCF as one of a company's three key criteria may be a product of the size correlation. That is, although larger companies are making large acquisitions these are relatively not as large. This therefore results in the smaller companies representing a greater proportion of those companies making acquisitions over 5 per cent of their own sales. The data shown in table 9.15 supports this, but not totally. The tables which show no relationship with size, however, tend to be separating the very large from the large. In the tests where 3 billion pounds of sales was used to divide the sample into large and small companies, acquisitions of up to 150 million pounds could be categorised as a small acquisition by a small company.

Table 9.15 Results of Chi-Squared Tests between The Relative Size of The Target and Bidder Sales and Profits

Relative Size of target divided at per cent and sales of buyin company in billions of pound divided at:	Minimum expected frequency	Probability of Distribution Occurring by Chance
1	6.0	.00209*** -
1.5	6.4	.00483*** -
2	8.3	.03098** -
2.5	7.3	.15528
3	6.6	.31537
Relative Size divided at 2 per cen and sales of buying company i billions of pounds divided at:		
1	8	.06909 * -
1.5	9	.20715
2	11.275	.20488
2.5	10.5	.42352
3	9	.25838
Relative Size divided at 5 per cen and profits of buying company i millions of pounds divided at:	Minimum expected frequency	Probability of Distribution Occurring by Chance
100	6.7	.16562
200	6.7	.98134
300	4.1	.17917
Relative Size divided at 2 per cen and profits of buying company i millions of pounds divided at:		
100	8	.84656
200	9	.18294
300	11.275	.51365

All tests had a sample size of 50 and 1 degree of freedom
- The larger the company the relatively smaller the acquisition
*** Significant at 1 per cent level
** Significant at 5 per cent level
* Significant at 10 per cent level

Chapter 2 proposed the hypothesis that :

2:1) Relatively small acquisitions will perform worse than larger acquisitions.

Table 9.15 Results of Chi-Squared Tests between The Relative Size of The Target and Bidder Sales and Profits

Relative Size of target divided at per cent and sales of buyin company in billions of pound divided at:	Minimum expected frequency	Probability of Distribution Occurring by Chance
1	6 0	.00209*** -
1 5	6 4	.00483*** -
2	8 3	.03098** -
2 5	7 3	15528
3	6 6	31537
Relative Size divided at 2 per cen and sales of buying company i billions of pounds divided at:		
1	8	06909 * -
1 5	9	20715
2	11 275	20488
2 5	10.5	42352
3	9	25838
Relative Size divided at 5 per cen and profits of buying company i millions of pounds divided at:	Minimum expected frequency	Probability of Distribution Occurring by Chance
100	6 7	16562
200	6 7	98134
300	4 1	17917
Relative Size divided at 2 per cen and profits of buying company i millions of pounds divided at:		
100	8	84656
200	9	18294
300	11 275	51365

All tests had a sample size of 50 and 1 degree of freedom
- The larger the company the relatively smaller the acquisition
*** Significant at 1 per cent level
** Significant at 5 per cent level
* Significant at 10 per cent level

Chapter 2 proposed the hypothesis that :

2:1) Relatively small acquisitions will perform worse than larger acquisitions.

As shown in table 9 16, two relationship between relative size, split at 5 per cent, and the first specific success measure were significant

The second hypothesis proposed in chapter 2, a replication of Hunts (1990 71) hypothesis:

2:2) There is a size mismatch if the seller's turnover is less than 2 per cent of that of the buyer and the failure rate will be above the norm.

This produced 3 positive correlations for the first specific success measure, as shown in table 9 17, which allowed the respondent to define the variables on which the acquisitions were rated. That is, acquisitions which were below 2 per cent of sales of the buyer performed worse than the norm. Thus, there is only limited significant evidence to support Hunt's (1990) or Kitching's (1973) results. There is, however, no evidence to support the opposite hypothesis. The researcher therefore concluded that there was no evidence to support or reject the existence of a relationship. This therefore would not appear to be a factor in negating the theoretical superiority of discounted cash flow analysis when it was used in acquisition decisions.

The other factor which is correlated with the size of an organisation is the possession of a corporate information library.[17] Five tests showed a significant association with general success measure.[18] The relationships, were negative in nature.

These 2 factors associated with size do appear to be having an effect on the level of success of an acquisition. The relationship for relative size is, however, not conclusive given the number of tests conducted. A company having a corporate library is strongly associated with poorer performance on the general success measure. It thus may be negating some of the theoretical benefit from using discounted cash flow measures

Table 9.16 **Results of Chi-Squared Tests between Relative Size of the Target Divided at Five Per Cent and Success**

Relative size of acquisition divided at 5 per cent and general success measure divided at:	Minimum expected frequency	Probability of distribution occurring by chance
2.5	2.3	1
2.7	3.2	1
2.9	3.2	1
3.0	3.9	.71094
3.1	4.5	.26462
3.2	5.2	.12069
3.3	5.8	.55607
3.4	5.8	.55607
3.5	5.5	.73171
3.6	4.5	1
3.7	3.9	1
3.8	3.6	1
3.9	2.9	1
Sample size 37 with 1 degree of freedom		
Relative size of acquisition divided at 5 per cent and first specific success measure divided at:	Minimum expected frequency	Probability of distribution occurring by chance
3.5	2.7	.21029
3.6	3	.20351
3.7	3.7	.04851 ** +
3.8	4.0	.02088 ** +
3.9	4.7	.26024
4.0	4.0	.13915
4.1	4.0	.13915
4.2	3.7	.42528
Sample size 30 with 1 degree of freedom		

Table 9.16 Continued **Results of Chi-Squared Tests between Relative Size of the Target Divided at Five Per Cent and Success**

Relative size of acquisition divided at 5 per cent and second specific success measure divided at:	Minimum expected frequency	Probability of distribution occurring by chance
3.2	4.5	.48925
3.3	5.5	.72324
3.4	5.9	.55816
3.5	6.3	.41698
3.6	7.0	.52617
3.7	8.1	.93643
3.8	7.0	.52617
3.9	5.9	.95553
4.0	4.8	.73901
Sample size 46 with 1 degree of freedom.		

Table 9.17 **Results of Chi-Squared Tests between Relative Size Divided at Two Per Cent and Success**

Relative size of acquisition divided at 2 per cent and general success measure divided at:	Minimum expected frequency	Probability of distribution occurring by chance
2.9	4.3	.71647
3.0	5.2	.89331
3.1	6.1	.51747
3.2	6.9	.95669
3.3	7.8	.60280
3.4	7.8	.60280
3.5	7.4	.27229
3.6	7.1	.51747
3.7	5.2	.19927
3.8	4.8	.15138
Sample size 37 with 1 degree of freedom.		

Table 9.17 Continued **Results of Chi-Squared Tests between Relative Size Divided at Two Per Cent and Success**

Relative size of acquisition divided at 2 per cent and first specific success measure divided at:	Minimum expected frequency	Probability of distribution occurring by chance
3.5	3.7	.10103
3.6	4.2	.04568 ** +
3.7	5.1	.02948 ** +
3.8	5.6	.07300 *+
3.9	6.5	.28198
4.0	5.6	.23300
4.1	5.6	.23200
4.2	5.1	.38941
4.3	5.1	.38941
Sample size 30 with 1 degree of freedom.		
Relative size of acquisition divided at 2 per cent and second specific success measure divided at:	Minimum expected frequency	Probability of distribution occurring by chance
3.1	4.957	.19035
3.2	4.957	.19035
3.3	6.2	.24908
3.4	6.6	.38171
3.5	7.0	.22880
3.6	7.9	.19058
3.7	9.1	.25147
3.8	7.9	.26111
3.9	6.6	.70194
4.0	5.4	.67502
Sample size 46 with 1 degree of freedom.		

Key

+ Relationship positive	
** Significant at 5 per cent level	* Significant at 10 per cent level.

9.1.11 Discounted Cash Flow Use and The Number of Acquisitions Conducted Over The Last 5 Years

The second group of factors significantly associated with discounted cash flow measures being one of a company's key criteria were those relating to the number and rate of acquisitions. These negative relationships could represent a possible bias in the sample. That is, that the companies who have conducted many acquisitions have more to chose from when deciding which one to discuss, and if they wish to put themselves in a good light they will chose the most successful one. If the success of an acquisition was based on chance then those companies which have conducted many acquisitions would appear more successful as there is a greater probability of 1 being successful by chance, thus biasing the results.

Given that companies which placed discounted cash flow measures in their 3 key criteria did fewer acquisitions, perhaps because they committed more management resources to each acquisition this would affect the relative success levels of the 2 sets of companies. That is, between those that did and those that did not place discounted cash flow analysis in their 3 key criteria.

These variables (Highest, median and lowest number of acquisitions conducted in any 1 year in the last 5 and total number of acquisitions conducted over the last 5 years) were intended as measures of corporate experience of acquisitions to allow hypothesis **5:21 The greater the number of acquisitions completed by a company the more likely success is,** generated in chapter 5 to be tested. No evidence was, however, found to support this hypothesis [19]. It though will be explored in greater detail in chapter 10 in conjunction with individual experience.

Correlation tests between the success measures used in this research and the number of acquisitions over the last 5 years on the sub-groups, companies which included DCF

in their 3 key criteria and companies which used DCF were not significant. The sample sizes , however, were between 15 and 19, and 25 and 35 respectively. This is an area therefore which would benefit from future examination using a larger sample size.

This, though, seems to remove the possibility of company experience or bias resulting from interviewees at companies having a larger number of acquisitions to choose from, one of which may have been serendipitously successful. This leaves a group of unrelated factors, as a potential explanation for the lack of superior performance by company's using discounted cash flow techniques.

9.1.12 Discounted Cash Flow Use and Other Process Factors

Of the 3 other factors which produced significant chi-squared results with discounted cash flow as one of a company's three key criteria that do not appear to be linked source of the acquisition, amount of work put into a review, and the use of accounting rate of returns. The first was found in chapter 7 to cause poor performance. Table 7.4 showed that acquisitions stimulated by the seller or an external agent performed worse than those resulting from the buyer approaching the seller, with the majority of the relationships being significant. This was correlated with increased use of discounted cash flow analysis and therefore could be a factor in negating the superior theoretical performance.

Table 9.18 shows that this relationship holds for the sub-group, companies using DCF. Results of tests between the variable DCF as one of a company's three key criteria and success while standardising for the source of the idea are presented in Tables D.19 and D.20 in appendix D. The results of only 3 tests between DCF one a company's three key criteria and sucess, for acquisitions which were stimulated by an internal idea, are significant, these are negative. The association with external ideas therefore remains a

potential explanation for the lack of superior performance of acquisitions where DCF was used

Table 9.18 Results of Chi-Squared Tests between Source of Idea and Acquisition Success for Companies Using DCF

Source of idea and general success measure divided at:	Minimum expected frequency	Probability of distribution occurring by chance
2.5	2.7	.06382 * +
2.7	3.6	.00970 *** +
2.9	3.6	.00970 *** +
3.0	4.0	.00327 *** +
3.1	4.931	.00274 *** +
3.2	5.8	.01722 **+
3.3	6.3	.01437 **+
3.4	6.3	.01437 **+
3.5	5.8	.03375 **+
3.6	4.5	.11421
3.7	3.6	.04434 ** +
3.8	3.1	.09272 * +
3.9	2.2	.34219
4	1.3	.03375 **+
Sample size 29 with 1 degree of freedom.		

Table 9.18 Continued Results of Chi-Squared Tests between Source of Idea and Acquisition Success for Companies Using DCF

Source of idea and first specific success measure divided at:	Minimum expected frequency	Probability of distribution occurring by chance
3.5	2.3	1
3.6	2.7	1
3.7	3.5	.69245
3.8	3.8	.42496
3.9	4.6	.10537
4.0	3.8	.21773
4.1	3.8	.21773
Sample size 26 with 1 degree of freedom		
Source of idea and second specific success measure divided at:	Minimum expected frequency	Probability of distribution occurring by chance
3.1	5	.45675
3.2	5	.45675
3.3	6.5	.29789
3.4	7.0	.17146
3.5	7.5	.09097 * +
3.6	7.5	.09097 * +
3.7	8.5	.09507 * +
3.8	7.5	.09097 * +
3.9	6.6	.03390 ** +
4.0	5.0	.02557 ** +
Sample size 26 with 1 degree of freedom		
- Internal ideas associated with superior performance		
** Significant at 5 percent level		
* Significant at 10 percent level		

There appears little logic to the link, as the outside stimulation of an acquisition was not related to size[20]. It is, however, possible that the agents driving the adoption of discounted cash flow analysis in acquisitions are outside agents. It is also possible that both are part of the professionalisation of management of an organisation, associated

with the employment of MBA's. Establishing this would appear difficult even if there is any causation in this link.

The volume of work put into the acquisition by the company will be examined in chapter 10 with the section on management resources available. It should be noted that the correlation, between the use of discounted cash flow in a company's 3 key criteria and the management time used on an acquisition is a positive one. That is, companies which used DCF inputted more management time than those that did not. Therefore, there appears to be evidence to say that, DCF analysis is not being used as a substitute for analysis work.

This leaves the use of accounting rate of return. The effect on success of this and the other 3 measures rejected by the finance literature will be examined in section 9.2.
To provide a balanced picture of the number of factors correlated with discounted cash flow use, those which were tested and not correlated with discounted cash flow are presented in table D.21 in appendix D. These show that a large number of factors which described the process or the individuals responsible in a quantitative fashion were not correlated with DCF as one of a company's three key criteria in an acquisition decision.

Thus the variables examined in the sections 9.1.9 to 9.1.12, as significantly correlated with DCF as one of a company's three key criteria in an acquisition decision, must be seen as representing only a limited number of facets of the process in, comparison with the elements represented by those variables which are not correlated with DCF as one of a company's three key criteria.

9.1.13 Conclusions on Lack of Superior Performance by Companies Using Discounted Cash Flow Techniques

The easiest explanation for the lack of superior performance at companies which used discounted cash flow analysis is methodological problems. There are inevitably methodological problems when examining a decision as sensitive as an acquisition. No success measure can capture all elements of an organisation's objectives, benefits to shareholders or benefits to other stakeholders. Reliance on a subjective measure, however, raises the question of differences in expectations between those who used and did not use discounted cash flow measures. This could only be resolved by using either finance or accounting measures. These, however, have problems as discussed in chapter 6.

There is clearly evidence to support the view that companies are not applying DCF correctly, given that fixed hurdle rates were used by large organisations which may have businesses with vastly different risks. There were also large variations in time scales covered. There is also extensive evidence that companies are ignoring DCF in some cases and in most cases supplementing it with other techniques which may produce contradictory results. The latter option is the most difficult to examine since to generate definite conclusions requires knowledge of board members mind sets at the time of decision making. Interviewing board members ex-post the event may not be illuminating as they may claim to have relied on DCF analysis when they have ignored it. This though, is a persuasive argument. The companies using DCF are clearly larger and company size is correlated with poorer performance but precisely how this influences success levels is unclear.

The researcher finds no argument completely persuasive. There is, however, insufficient evidence to refute any of the explanations put forward. They all therefore should be avenues for further research.

9.1.14 Section Summary

This section has examined the use of discounted cash flow measures and success. It has concluded that the evidence does not support the view that DCF techniques produced superior performance for acquisitions.

Explanations proposed for this were :

A) Methodological problems, - a biased success measure. No reason was found to bias the success measure although it was accepted that the use of a subjective success measure was reliant on companies having consistent expectations. No other success measure would have allowed the data used to be collected.

B) Methodological problems, - the success measure used was not sensitive enough when used in chi-squared tests. As a result of the sample size, 52, only 2 by 2 chi-squared tests were possible. This reduced the sensitivity of the success measures to small changes. To counteract this, chi-squared tests were repeated with a spread of division points, this showed that the correlations which were significant, were negative. To improve the sensitivity of the success measure the sample size could be increased. This, however, was not an option for this research.

C) Methodological problems - inaccurate data, no further way round this problem was viewed as viable. Observation and collection of written sources was seen as unlikely to be possible. It was therefore concluded that the evidence was insufficient to support hypothesis **4:4**: **Use of discounted cash flow measures as decision criteria in acquisitions will increase success.**

D) NPV is superior to other methods but IRR's flaws reduce its superiority which results in DCF measures as a whole not producing superior success levels. Conflicting evidence was presented , thus no positive conclusions could be drawn

E) Decision makers are ignoring DCF analysis when making decisions. The use of other measures and a number of qualitative sources were presented as evidence on this but it could only be concluded that this was a possible source of loss of superior performance.

F) Increased use of fixed hurdle rates in companies using DCF is negating superior performance. The use of fixed hurdle rates was shown to be positively correlated with use of DCF. However, there were only 2 valid negative results which were significant at the 10 per cent level, between the use of fixed hurdle rates in general and the second specific success measure. There were 3 significant positive correlations between the general success measure and the use of a fixed hurdle rate in the specific case examined. This was viewed as insufficient to accept hypothesis **4:7** that : **The use of fixed hurdle rates will lower success levels.**

G) Application of discounted cash flow methods is a variable leading to invalid conclusions.

H) Companies using DCF techniques are larger than other companies in the sample and this affected success levels.
Hypothesis **4:8** : **The larger the company the greater the use of discounted cash flow measures** was accepted. Size, was significantly negatively correlated to success

1) Companies using DCF techniques are so fundamentally different from the other companies in the sample that this affected success levels. A number of other factors examining the acquisition process were found to be significantly correlated with DCF as one of a company's three key criteria. Two of these factors were associated with Size, a company having a corporate information library and relative size of the acquisition. The relationship between these factors and success was significant for only a few divisions of the general success measure and first specific success measure respectively. This was considered insufficient to support the hypothesis that, relatively small acquisitions will perform worse than larger acquisitions or that the presence of a corporate information library will reduce success levels. The factors concerning rate of acquisition will be examined in the next chapter. The only factor which was significantly related to both DCF as one of a company's three key criteria and success was the source of acquisitions. External acquisitions were found to produce lower success levels. This, it was concluded, could be a significant factor in negating the success of acquisitions where companies used discounted cash flow analysis

This research, having concluded that the use of the theoretically superior discounted cash flow analysis did not improve performance, will now examine whether the criteria which the finance literature consider unsuitable for capital investment decisions affected success

9.2 Other Financial Criteria and Success

The finance literature reviewed in chapter 4 proposed that accounting rate of return, payback and earnings per share dilution should not be used for capital budgeting decisions. The following hypotheses, concerning use of other financial criteria apart from DCF techniques, were generated:

4:1) The use of payback as a decision criterion will reduce success

4:2) The use of accounting rate of return as a decision criterion will reduce success

4:3) The use of earnings per share as a decision criterion will reduce success

This section will examine these, beginning with payback.

9.2.1 Payback and Success

The evidence of payback and success is provided in table 9.19. It shows that there is only 1 significant relationship between payback and success and this is positive. There therefore appears to be no evidence to support hypothesis **4:1**. Detecting a relationship between payback and success was likely to be difficult even if one existed, as it was rarely used except in combination with 1 other criteria and more usually with 2 or more other criteria. Payback was also very rarely a key criteria, suggesting its influence on decisions is limited.

To test whether payback was not an influential factor the researcher examined the data for significant relationships between acquisition process factors and the use of payback. Payback was significantly associated with only 4 variables: the years the interviewee had spent at a company, the number of years an interviewee had spent in the industry, the number of groups of people asked for information and the man weeks work spent on an acquisition. Two of these variables, the years spent at a

company by an interviewee and the years spent in an industry by an interviewee were closely related. This, however, may be a proxy for interviewee age. To have spent a long period at a company or in an industry requires the interviewee to be older. These people may have finished any professional training prior to the widespread acceptance that DCF analysis should be used [21] or its rapid use was possible through computerisation and the use of spreadsheets. These people may therefore look at payback out of habit or for reassurance that the discounted cash flow calculations are not wildly inaccurate. This is, however, speculative and is an hypothesis for future investigation.

None of the relationships presented in tables 9.20. are significant for more than 1 division of the scalar variables and only 1 factor is significant at the 5 per cent level. This lack of correlation seems to reinforce payback's position as a secondary criteria which does not significantly affect the acquisition process.

Accounting rate of return which the researcher will now examine, similarly does not appear to be a significant factor in influencing success or the acquisition process.

Table 9.19 Results of Chi-Squared Tests between Use of Payback as An Acquisition Decision Criteria and Success

Use of payback as acquisition decision making criteria and second specific success measure divided at:	Probability of distribution occurring by chance	Minimum expected frequency
3.1	.44470	5.9
3.2	.44470	5.9
3.3	.29172	7.3
3.4	.46310	7.8
3.5	.67176	8.3
3.6	.86133	9.2
3.7	.65217	10.8
3.8	.27320	8.8
3.9	.83299	7.3
4.0	.44470	5.8
All tests had sample sizes of 45 and 1 degree of freedom		
Use of payback as an acquisition decision making criteria and first specific success measure divided at:	Probability of distribution occurring by chance	Minimum expected frequency
3.7	.10521	5.1
3.8	.05211* +	5.6
3.9	.26068	6.5
4.0	.29564	5.6
4.1	.29564	5.6
4.2	.51043	5.1
4.3	.51043	5.1
All tests had sample sizes of 30 and 1 degree of freedom		

Table 9.19 Continued **Results of Chi-Squared Tests between Use of Payback as An Acquisition Decision Criteria and Success**

Use of payback as an acquisition decision making criteria and general success measure divided at:	Probability of distribution occurring by chance	Minimum expected frequency
2.9	1	5
3	.72057	5.5
3.1	.50121	7
3.2	.18876	8
3.3	.74560	9.5
3.4	.74560	9.5
3.5	.74423	8.5
3.6	1	7
3.7	.48519	6
3.8	.72057	5.5
All tests had sample sizes of 45 and 1 degree of freedom		
+ Direction of relationship positive		

Table 9.20 **Chi-Squared Test Results between Payback and Other Process Factors**

Use of payback as an acquisition decision criteria and:		Minimum expected frequency	Probability of distribution occurring by chance
Number of groups of people asked for information divided at:	4 6 8	8.4 7 6.6	.02758** + .20489 .36659
Years spent at company divided at:	6 8	9.3 7.0	.09021* + .19431
Years spent in industry by interviewee divided at:	6 8 10	7.9 9.8 7.4	.06909* + .17208 .32434
Man weeks work spent on acquisition divided at:	31 and 90 40 50	6.6 8.9 10.3	.07689* - .19683 .17544
** Significant at 5 percent level		* Significant at 10 percent level	
- Direction of relationship negative		+ Direction of relationship positive	

9.2.2 Accounting Rate of Return's Use as a Decision Criterion and Acquisition Success.

Chapter 4 proposed the hypothesis that: **4:2 Use of accounting rate of return as a decision criterion will reduce success** was proposed. The evidence in table 9.21 seems not to support this. Only 1 valid chi-squared test between the first specific success measure and the use of accounting rate of return is significant.

Exploration of accounting rate of return's influence on other process factors found 4 areas correlated with the use of accounting rate of return :

The number of acquisitions conducted over the last 5 years.

The source of the acquisition, internal or external.

The number of sources of information used.

Relative size.

It could be proposed that highly active experienced acquirers, which therefore have a high level of corporate experience of acquisitions, have adapted to this by focusing on an accounting rate of return rule of thumb which requires less management resources to carry out. They instead use management resources to generate ideas for acquisitions which, as was shown in chapter 7, are likely to be more successful than one's stimulated by either third parties or the seller. The emphasis is thus on the quality of the original idea rather than the analysis. Some of these companies may be suspicious of clever methods and outside advisers :

One company stated :

> 'We are a very prudent group, we don't put our fingers in the air and apply fancy multiples to things.'
>
> 'And I would base the price and valuation on the current years profit, because we know that is substantiated.'

And on outside consultants :

'With all those businesses I have purchased I can't remember one which was found by an external agent. They have all been found by ourselves.'

'We have done a lot of acquisitions and none have been found by these type of people.'

This is, however, speculative but should be explored further in future research. Their are, however, a large number of variables for which no correlation exists with the use of accounting rate of return. The main conclusion therefore has to be that the use of accounting rate of return was not a significant factor in determining either the process or success levels at companies which used it. In contrast, earnings per share use is highly correlated with one of the success measures. The researcher will now examine this.

Table 9.21 Chi-Squared Test Results between The Use of Accounting Rates of Return and Success Measures

Use of accounting rate of return as an acquisition decision making criteria and second specific success measure divided at:	Minimum expected frequency	Probability of Distribution Occurring by Chance
3.1	5.3	65100
3.2	5.3	65100
3.3	6.7	83200
3.4	7.1	94440
3.5	7.6	73103
3.6	8.4	78720
3.7	9.8	64066
3.8	8.0	54029
3.9	6.7	39614
4.0	5.3	25019
All tests had sample sizes of 45 and 1 degree of freedom		
Use of accounting rate of return a an acquisition decision making criteria and first specific success measure divided at:	Minimum expected frequency	Probability of Distribution Occurring by Chance
3.5	3.2	1
3.6	3.6	62559
3.7	4.4	44248
3.8	4.8	25985
3.9	5.6	05211*+
4.0	4.8	13618
4.1	4.8	13618
All tests had sample sizes of 30 and 1 degree of freedom		
Use of accounting rate of return as an acquisition decision making criteria and general success measure divided at:	Minimum expected frequency	Probability of Distribution Occurring by Chance
3.0	5.1	97032
3.1	5.9	54223
3.2	6.7	86098
3.3	8.0	51110
3.4	8.0	51110
3.5	7.2	91690
3.6	5.9	54223
3.7	5.0	45685
All tests had sample sizes of 38 and 1 degree of freedom		

Key

* Significant at 10 per cent level
+ Direction of relationship positive

Table 9.22 **Chi-Squared Test Results between The Accounting Rate of Return and Other Process Factors**

Use of accounting rate of return and :	Minimum expected frequency	Probability of distribution occurring by chance
Relative size divided at: 2	9.7	.03467**+
5	7.5	.12962
Number of sources of information used divided at 4	6.8	.07886*+
6	5.7	.02969**+
8	5.7	.02993**+
Source of idea, internal or external	10	.01734**♥
Total number of acquisitions in last 5 years divided at : 10	7.7	.28021
12	7.7	.28021
13.5	7.1	.01480**+
Highest number of acquisitions conducted in any year in last 5 years divided at : 4.5	9.8	.01420**+
6	8	.01392**+
Median Number conducted over the last 5 years divided at: 3.3	8.9	.00356***+
Range of number of acquisitions conducted in each year over last 5 years divided at: 4.5	8.4	.00594***+

+	Direction of relationship positive
–	Direction of relationship negative
♥	Internal sources of idea associated with use of accounting rate of return
***	Significant at 1 percent level ** Significant at 5 percent level
*	Significant at 10 percent level

9.2.3 Use of Earnings Per Share as an Acquisition Criteria, Success and the Acquisition Process

The final capital budgeting technique rejected by the finance literature is earnings per share dilution. Chapter 4 presented hypothesis **4:3,** that: **Use of earnings per share as a decision criterion will reduce success.** The evidence in table 9.23 seems to support this hypothesis for the second specific success measure. There is, however, only limited evidence that this relationship holds for the general success measure and no evidence for the first specific success measure.

It is difficult to explain this anomaly. There is no reason[22] to expect the one success measure focused on a specific case to be systematically different from the other one. The difference between the second specific success measure and the general success measure is that the respondents were asked to focus on the specific case in the former and the general performance of the company's acquisitions in the latter. The items on the instruments were however identical. This therefore suggests that many companies were not answering with respect to a specific acquisition when talking about general performance.

The difference between the second specific success measure and the first is that the first is based on what the respondents viewed as their company's three key criteria, the second measure on: return on investment, effect on earnings per share, effect on group share price, cash flow, and sales growth.

These differences in the test results make it difficult to draw a clear conclusion on hypothesis **4:3**. Equally significant is that the use of earnings per share was not significantly related to any process factor.

The use of earnings per share like payback, and accounting rate of return does not seem a key factor in determining the process a company uses to make acquisitions. It, however, does have a negative relationship with success.

9.2.4 Section Summary

This section has examined 3 main hypotheses :

4:1) Use of payback as a decision criterion will reduce success

4:2) Use of accounting rate of return as a decision criterion will reduce success

4:3) Use of earnings per share as a decision criterion will reduce success

It concluded that there is no evidence to support the first 2. However, there is clear evidence to support the third hypothesis for 1 success measure. There is no evidence, however, for the success measure using the respondents own reference frame

The influence of these 3 variables, Payback, ARR and EPS on other process factors is very limited. The association of payback with the length of time a respondent has spent in an industry and at a company may be a product of age, older managers not having dropped the use of payback. These limited number of correlations seems to reinforce payback's position as the least important criteria, even if it is used by more companies than accounting rate of return.

Table 9.23 **Chi-Squared Test Results between The Use of Earnings Per Share as An Acquisition Decision Making Criteria and Success Measures**

Use of earnings per share as an acquisition decision making criteria and second specific success measure divided at	Minimum expected frequency	Probability of distribution occurring by chance
3.3	5.3	.02766** -
3.4	5.6	.08023* -
3.5	6.0	.05052* -
3.6	6.8	.01789** -
3.7	7.8	.01726** -
3.8	6.4	.02211** -
3.9	5.3	.01542** -
4.0	4.3	.05424* -
All tests had sample sizes of 45 and 1 degree of freedom.		
Use of earnings per share as an acquisition decision making criteria and first specific success measure divided at:	Minimum expected frequency	Probability of distribution occurring by chance
3.8	5.2	.88044
3.9	6.1	.96073
4.0	5.2	.88044
4.1	5.2	.88044
All tests had sample sizes of 30 and 1 degree of freedom		
Use of earnings per share as an acquisition decision making criteria and general success measure divided at:	Minimum expected frequency	Probability of distribution occurring by chance
3.2	4.6	.23719
3.3	5.5	.28323
3.4	5.5	.28323
3.5	4.9	.9097
3.6	3.5	.14191
3.7	2.6	.06790* -
3.8	3.2	.04706** -
All tests had sample sizes of 38 and 1 degree of freedom		
-	Direction of relationship negative	
**	Significant at 5 per cent level	
*	Significant at 10 per cent level	

9.3 Chapter Summary

The main hypotheses looked at in this chapter, and conclusions on each are presented below. The lack of superior performance by companies using DCF measures was examined in detail, and several possible interpretations of it were offered: the result was inaccurate; DCF methods were not applied correctly; companies using NPV did produce superior results but companies using IRR did not, because of its flaws and this reduced the overall success level of companies using DCF methods; DCF is being used but the results are ignored in the decision making process; or DCF is being used as a substitute for analysis, and thus superior performance as a result of DCF being used is being lost because of other changes in the acquisition decision process associated with it. The researcher favoured the views that some companies were ignoring DCF in some cases; that discount rates did not accurately reflect risk as fixed hurdle rates were being used; and that acquisitions conducted by companies which used discounted cash flow criteria were more likely to have been stimulated by an external party. This was associated with lower success levels. No option, however, could be rejected.

It was concluded that larger companies were more likely to use discounted cash flow analysis even though all the companies with one exception had sales over 200 million pounds.

The examinations of hypotheses on payback, ARR and success concluded that the use of these criteria did not influence success levels. Use of EPS was, however, found to be associated with lower levels of 1 success measure. No other factor was correlated with EPS.

In conclusion, this chapter has found that the use of Payback and ARR are not correlated with any changes in success levels. However, use of DCF and use of EPS

was correlated with lower success levels on 1 measure. Chapter 10 will examine how experience and management resources affect success and the process by which companies consider making an acquisition.

9.4 The Main Hypotheses Examined in this Chapter and Conclusions

4:4) The use of discounted cash flow measures as decision criteria in acquisitions will increase success.

No evidence was found to support this. It was therefore rejected.

4:5) Use of NPV as a decision criteria will increase success rates

This cannot be accepted. It is, however, an area which would benefit from the larger sample frame possible with a questionnaire approach.

4:6)The use of only NPV as a decision criteria will give an increased level of success,

This could not be tested because only 4 companies used only NPV. These, however, also used non financial criteria.

4:7) The use of fixed hurdle rates lowers success levels

The evidence presented seems to imply rejection of this hypothesis.

4:8)The larger the company the greater the use of discounted cash flow measures.

There was extensive evidence to support this hypothesis.

2:1) Relatively small acquisitions will perform worse than larger acquisition.

Only limited evidence of a relationship between relative size and the success measures was found. The researcher, however, concluded this was insufficient to accept hypotheses **2:1 and 2:2**.

4:1) Use of payback as a decision criterion will reduce success

There was no evidence to support this hypothesis.

4:2) Use of accounting rate of return as a decision criterion will reduce success

There was no evidence to support this hypothesis.

4:3) Use of earnings per share as a decision criterion will reduce success

There is evidence to support this hypothesis for the second specific success measure which imposed a reference frame. However, there was no evidence for the first specific success measure, and only limited evidence for the general success measure.

Footnotes

[1] Not value maximising.

[2] The normally accepted minimum expected frequency for a chi-squared test to be valid is 5 (Kanji, 1993:69). For tests which use 2 by 2 contingency tables, where the minimum expected frequency is below 5, the result of a Fisher exact test is given

[3] For this Chi-squared test the general success measure was divided at 3.4, as no company produced a result of 3.4, and this was the median value. This thus resulted in 19 companies being recorded as successful, and 19 companies as unsuccessful

[4] The first specific success measure measured success of a specific acquisition. It was based on the criteria that the interviewee thought were the three most important in that acquisition. The respondent was asked to rate performance on those criteria out of 5 and weight the criteria on how important they were in the decision making process for that specific acquistion. For this chi-squared test it was divided at 4.2. This value was chosen because no company recorded a value of 4.2 on this scale and it was close to the mean of 3.9. This resulted in 11 companies categorised as successful and 19 unsuccessful. The minimum recorded value was 2.5, the maximum 5 and the standard deviation .673

[5] The second specific success measure was a replication of Datta and Grant's (1991) success measure as shown in figure 6.1. The dividing point used to convert the second specific success measure to a dichotomous variable was 3.4. This was marginally below the mean of 3.61 and median of 3.700. The lowest recorded value was 1.545 and highest 5.0. The standard deviation was .797.

[6] Pre-tax profits divided by sales.

[7] The normally accepted minimum expected frequency for a chi-squared test to be valid is 5 (Kanji, 1993:69). For tests which use 2 by 2 contingency tables, where the minimum expected frequency is below five, a Fisher exact test result is given

[8] The normally accepted minimum expected frequency for the test to be valid is 5 (Kanji, 1993 69) For tests which use 2 by 2 contingency tables, where the minimum expected frequency is below five, a Fisher exact test result is given.

[9] For 5 of these companies, data was collected on the second specific success measure, for 2 companies on the general success measure and 2 companies on the first specific success measure.

[10] The second specific success measure was a replication of Datta and Grant's (1991) Success measure as shown in figure 6.1. It required the respondent to rate the acquisitions perforamnce for 5 variables, return on investment, effect on earnings per share, effect on group share price, cash flow and sales growth and weght them by how important the respondent thought those criteria were in the decision process for that acquisition

[11] Fisher exact tests is only valid for 2 by 2 contingency tables.

[12] The Chi-squared test on companies using DCF analysis as one of their three key criteria and standardisation of application of criteria produced a result of ,a probability of occurring by chance of, .3495.

[13] See table D.5 in appendix D.

[14] See table D.5 in appendix D.

[15] See table D 18 appendix D.

[16] For main variables used in this research the mean, standard deviation, median mean, minimum and maximum recorded values are given in appendix E.

[17] The significance levels of a company having a corporate library and sales split at 1 billion , 2 billion and 3 billion respectively, were, 99.1, 99.2, and 96.4. See table D.6 appendix for full results of chi-squared tests.

[18] See table D.7 in Appendix D for details.

[19] See table 10.3

[20] The significance levels were 74, 73 and 74 per cent respectively for the variable internal or external source of acquisition idea and size split at 3, 2 and 1 billion pounds sales.

[21] Rockley (1970:130) proposes that DCF should be used but that they' are finding increasing acceptance for the evaluation of industrial capital expenditure' and that ' the most widely used method of investment evaluation is payback ' (1970:124)

[22] Correlations between success measures can be seen in table D 8 in appendix D

Chapter 10 Experience, Management Resources And The Use Of Consultants

10.0 Introduction and Summary of Chapter Five

The last 3 chapters have examined the core of the acquisition decision process, what information companies collected, the criteria they used to make a decision and their link with success. This chapter will examine the variables presented in figure 1.10 as being influences on these processes. These are primarily experience and the management resources available.

The literature examined in chapter 5 on expertise and experience suggests that, contrary to the expectations of the rational economic man model, decision makers who have greater experience behave differently to those with no experience of making specific decisions. Chapter 5 presented conflicting evidence on how expertise and experience effect success. Many studies, which have examined real situations have found that experienced decision makers performed in a fundamentally different manner, recognising situations and recalling previous solutions (Klien,1993). The evidence from the experiment-based research found that expert decision makers performed worse at stock prediction, while they were able to sort problems more rapidly. Studies on chess have found that the advantage of expertise is more pronounced in time pressured situations. Chapter 5 therefore proposed the hypotheses that, **Experience of acquisitions will increase success levels.**

Chapter 5 further showed that experience was multi-faceted, with individual experience of the industry, company and acquisitions, and company experience of acquisitions found to be relevant. The researcher decided that any measure of company experience of an industry would be arbitrary. A parent company may have only been involved in an industry for 6 months after a take-over, the subsidiary may, however, have been in that industry for hundreds of years. The above hypothesis was therefore

restated defining individual experience as, **the number of acquisitions completed by a manager (Hypothesis 5:1) the number of acquisitions' reviews carried out by a manager (Hypothesis 5:2) the number of years a manager has spent with a company (Hypothesis 5:3) the number of years a manager has spent within an industry (Hypothesis 5:4)** with company experience defined as; **the number of acquisitions completed by a company in the last 5 years. (Hypothesis 5:21).**

The literature further proposes that it is not just the outcome, but how expert decision makers make decisions that are different Yates, McDaniel and Brown (1991) found expert decision makers collected more information before making a decision The researcher therefore proposed that; experience, defined in the 5 ways above, would lead to greater information collection. He measured information collection in 2 ways; the number of information sources used and the number of people asked for information This resulted in hypotheses **5:5** to **5:12** and **5:22** and **5:23** being generated.[1]

Day and Lord(1991) found evidence of a second difference; experts were significantly faster in their categorisation to sort problems. This is supported by Calderwood, Klien and Crandwall's (1990) and Chase and Simon's (1973) work on chess. The researcher therefore, proposed that: **Experience will lead to greater speed in acquisition decision making.** This will be tested for the 5 types of experience proposed above (the number of acquisitions completed by a manager, the number of acquisitions' reviews carried out by a manager, the number of years a manager has spent with a company, the number of years a manager has spent within an industry). Two facets of time were considered relevant to this situation, elapsed time and man weeks work involved This resulted in the generation of Hypotheses **5:13** to **5:20 and 5:24** and **5:25**

This chapter will examine the hypotheses dealing with expertise in 3 groups, those relating to expertise combined with success, the number of information sources used, and decision making speed

Figure 1.10 also proposed that, the management resources available to analyse an acquisition will influence the process and its outcome. Kitching (1972,1973) suggested that acquisitions can consume large volumes of management resources, and the management skills available must be greater than the task. The researcher thus put forward the hypotheses that:

5:26) The greater the volume of management time devoted to a project the greater the success.

5:27) The greater the number of people dedicated to working on acquisitions the greater the success.

It was further proposed that companies could use external consultants as a substitute for internal managers to carry-out analysis work. The evidence presented, however, implied that the use of consultants might reduce success levels. Chapter 7 showed that acquisitions which resulted from an external stimulus were less successful than those resulting from an internal idea. It was therefore proposed that:

5:31) The greater the number of consultants used the lower the success level.

This thesis will divide the hypotheses on the management resources available to conduct an acquisition into 2; those that deal with internal management resources and, those that cover the use of consultants

The researcher will now begin the empirical content of this chapter by examining individual experience.

10.1 Individual Experience

The researcher proposed in chapter 5 that:

5:1) The greater the number of acquisitions completed by a manager the greater the probability of an acquisition being successful and,

5:2) The greater the number of acquisitions' reviews carried out by a manager the greater the probability of an acquisition being successful.

Table 10.1 shows the results of testing these hypotheses.

Table 10.1 Results of Kendall Rank Correlation Tests between Individual Experience of Acquisitions and Success

	General Success Measure	Specific Success Measure One	Specific Success Measure Two
Sample Size	27	27	33
Number of acquisitions' reviews completed by manager	.0813	.0381	.0721
Sample Size	29	28	35
Number of acquisitions' reviews completed by manager that have resulted in an acquisition	.1069	.0193	.0541

Note - Kendall rank correlation coefficients are given.

There is no evidence, in table 10.1, to support any relationship between success levels and the experience of managers measured by the number of completed acquisitions or number of acquisitions' reviews carried out.

This could be a product of variation in how involved a manager was with each of the acquisitions. The researcher considered reviewing each acquisition case with the manager to determine their level of involvement. Developing a categorical variable based on this would be impossible with any manager actively involved in acquisitions

All companies stated that one manager was in overall control of the project for the period. The manager responsible for the project, however, rarely carried out all the analysis work. Specific experience of acquisitions by the manager responsible for the acquisition does not appear to be a factor in the success level.

In contrast, table 10.2 supports hypothesis 5:3 and 5:4.

5:3) The greater the number of years a manager responsible for a project has spent with a company the greater the probability of an acquisition being successful.

5:4) The greater the number of years a manager responsible for a project has spent within an industry the greater the probability of an acquisition being successful

Table 10.2 Results of Kendall Rank Correlation Tests between Manager Experience of The Company and Industry and Success

	General Success Measure	Specific Success Measure One	Specific Success Measure Two
Sample Size	34	29	40
Years spent at company	.0361	.1407	.2541**[b]
Sample Size	34	29	40
Years spent in industry	.0794	.2657**[a]	.2717**[c]
** Significant at 5 per cent level		[a] Significance level 4.6 per cent	
[b] Significance level 2.3 per cent		[c] Significance level 1.5 per cent	

Individual experience of the industry and the company therefore seems important in acquisition success. However, there could be several other explanations for this. The success measure may be biased. Long serving employees may rate acquisitions they were involved in as more successful than other people, who have not been at a company for a long period. That is, long serving employees might rate acquisitions,

which are equal on some hypothetical neutral scale, as more successful than other managers. They will also have no recent external experience with which, to compare the success of an acquisition. Equally, however, managers who have not been at a company a long period, may rate acquisitions as more successful, because they have been responsible only for a few acquisitions at that company. Their reputation at that company may therefore be highly related to the success of each acquisition. A manager who has been at a company a long period may be less dependent on each acquisition being seen as successful, as he or she may have conducted many acquisitions and been responsible for many major decisions at the company that have resulted in a successful outcome.

Other factors that could possibly explain this relationship will be explored in sections 10.2 and 10.3, which will focus on experience and information collection and speed. Corporate experience, like individual experience of acquisitions, does not appear to influence acquisition success. Not only does the evidence, in table 10.3, not support hypothesis **5:21: The greater the number of acquisitions completed by a company the greater probability of an acquisition being successful,** it indicates the opposite direction of relationship. This relationship is, however, very weak.

It should be noted that the measure of company experience only covered the last 5 years of acquisitions. The reason the researcher used only the last 5 years of data, was that this was available from a reliable consistent source, Extel. Data before this would have had to have been taken from company reports, which might include a wide variation in reporting standards. This might affect the relationship, as it could be that total company experience is important. Measuring total company experience would be difficult, as it would require going back over a 100 years of company reports. A second problem with this data is that many small acquisitions may not be reported at all.

Given that no relationship existed between success and corporate experience, the researcher considered that, this could be because companies were conducting acquisitions in bursts This could give periods of intensive activity that might overload resources and periods of inactivity where experience becomes out of date or lost (Kusewitt,1985). The researcher therefore proposed to test this view by testing the following hypotheses

10:1) The lower the minimum number of acquisitions conducted in any of the last 5 years the less likely is success.

10:2) The higher the highest level of acquisitions conducted in the last 5 years the less likely is success.

10:3) The greater the range between the highest and lowest levels of activity over the last 5 years the less likely is success.

The evidence presented in table 10:3 does not support these hypotheses.

The researcher further thought that the size of the company and the management resources available to conduct acquisitions would affect the level of transactions at which the overloading of resources would start to occur. (Kusewitt,1985). To examine this the researcher looked at the number of acquisitions conducted in the last 5 years divided by sales and the number of people currently working on acquisitions. Table 10.3 shows that when standardised for sales and the number of people currently working on acquisitions no significant relationships between company experience and success existed for the companies in the sample frame. These relationships are, however, positive

Table 10.3 **Results of Kendall Rank Correlation Tests between Company Experience of Acquisitions and Success**

	General Success Measure	Specific Success Measure One	Specific Success Measure Two
Sample Size	36	29	42
Total number of acquisitions completed in last 5 years.	-.0693	.0638	.0499
Sample Size	36	29	42
Lowest number of acquisitions completed in one year in last 5 years.	-.0262	-.1647	-.0364
Sample Size	36	29	42
Largest number of acquisitions completed in one year in last 5 years.	-.1053	.1122	-.0149
Sample Size	36	29	42
Range between largest number of acquisitions completed in one year in last 5 years and lowest.	-.1620	-.1122	-.0435
Sample Size	34	28	41
Total number of acquisitions completed in last 5 years divided by sales	.1774	.1509	.1572
Sample Size	27	24	33
Total number of acquisitions completed in last 5 years divided by number of people currently working on acquisitions.	.1198	.0148	.1618

This is in contrast to Kusewitt(1985 159) who found a significant relationship between return on assets and acquisition rate divided by assets and a market return measure The researcher therefore concluded there was no evidence to support hypothesis 5 21, even when modified to account for the availability of management resources The measure or number of acquisitions conducted over the last 5 years could be viewed as an acquisition rate measure. The results produced do not fit with Kusewitt's (1985) finding that higher acquisition rates were associated with poorer performance This could, however, be a product of what Kusewitt(1985) saw as 2 opposing forces, management overload resulting from too many acquisitions and increased experience [2]

10.1.1 Section Summary

This section has examined the hypothesis that: greater experience will improve acquisition success It has found no evidence to support the hypotheses that, individual or corporate experience of acquisitions effected success Individual experience of the company and industry was, however, positively correlated with acquisition success

The researcher will now examine the hypothesis that experience will affect the number of information sources used.

10.2 Experience and Information Collection

The literature examined in chapter 5 proposed that not only did experience and expertise affect the success of decisions but also how decisions were made Yates, McDaniel and Brown, (1991) found experienced decision makers used more information As a result of this the researcher generated the hypotheses that.

Experience will increase the number of information sources used.

Experience will increase the number of people asked for information.

The researcher will test these hypotheses using the 5 measures of experience proposed in chapter 5: **the number of acquisitions completed, the number of acquisition reviews', years spent in industry, years spent at company, and the number of acquisitions conducted by the company over the last 5 years** (Hypotheses 5:5 to 5:12 and hypotheses 5:22 and 5:23).

Table 10.4 shows no support for the hypotheses, referring to company experience, that is:

5:5) The greater the number of acquisitions completed by a manager the greater the number of information sources used.

5:6) The greater the number of acquisitions completed by a manager the greater the number of people asked for information.

5:7) The greater the number of acquisitions' reviews carried out by a manager the greater the number of information sources used.

5:8) The greater the number of acquisitions' reviews carried out by a manager the greater the number of people asked for information.

The relationships in table 10.4 although not significant are negative indicating greater experience of acquisitions resulted in fewer people being asked for information and information sources used.

Table 10.4 Results of Pearson Correlation Tests between Individual Experience of Acquisitions and Information Collection

	Number of sources of information used	Number of people asked for information
Sample Size	36	34
Number of acquisitions' reviews completed by manager	-.1230	-.2486
Sample Size	34	36
Number of acquisitions' reviews completed by manager that have resulted in an acquisition	- 1148	-.1647

Note - numbers quoted are Pearson correlation coefficients

In contrast, table 10 5 shows support for hypotheses 5:10 and 5:12 There, however, is no evidence in table 10 5 to support hypotheses 5:9 and 5 11 [3] That is greater experience of the company and industry are correlated to asking greater number of people for information

Table 10.5 Results of Pearson Correlation Tests between Experience of Company and Industry and Number of Information Sources Used

	Number of sources of information used [4]	Number of people asked for information
Sample Size	40	39
Years spent at company	1444	.3356**[a]
Sample Size	40	36
Years spent in industry	.1018	.3361** [b]

[a] Significance level 2 6 per cent [b] Significance level 3 6 per cent

This could be explained by larger companies employing more people and therefore there being more people to ask for information, shown in table 10 6, and people staying at larger companies longer, shown in table 10 7

Table 10.6 **Results of Pearson Correlation Tests between Number of People Asked for Information and Sales.**

	Number of sources of information used [5]	Number of people asked for information
Sample Size	45	42
Sales for last set of accounts	-.0425	.6331****
Sample Size	45	42
Sales for penultimate set of accounts	-.0446	.6392****
**** Significant at less than 0 01 percent level		

Table 10.7 **Results of Pearson Correlation Tests between Sales and Length of Time Spent at A Company**

	Years spent at company [6]	Years spent in industry
Sample Size	42	42
Sales for last set of accounts	.3874**[e]	.2706*[g]
Sample Size	42	42
Sales for penultimate set of accounts	.3873**[e]	.2730*[h]

** Significant at 5 per cent level	* Significant at 10 per cent level
[e] Significant at 1 1 per cent level	[g] Significant at 8 3 per cent level
[h] Significant at 8 0 per cent level	

Note - Pearson correlation coefficients given

A second possible explanation for this is that people who have spent long periods within an industry or company know more people in that sector whom they can ask for information, without alerting the city or competitors that they are considering making an acquisition Whether this increased availability of information is responsible for the greater success levels that are associated with greater experience of the industry and company is uncertain and difficult to explore in a naturalistic setting.

The evidence on company experience, in table 10 8, does not support the hypotheses that:

5:22) The greater the number of acquisitions completed by a company the greater the number of information sources used.

5:23) The greater the number of acquisitions completed by a company the greater the number of people asked for information.

One relationship out of the twelve tested was significant. However, it was of the opposite direction to that hypothesised. The researcher therefore rejected the hypotheses, **5:22** and **5:23**, but decided the results were insufficient to warrant further exploration.

10.2.1 Section Summary

This section has examined experience and information collection. Experience of acquisitions by the company and the individual did not appear to be an influence on the number of information sources used. The individual's experience of the company and industry, however, did appear to be a factor in the volume of information collected for the process. The next section will examine the hypothesis that greater experience will lead to more rapid decision making.

Table 10.8 **Results of Pearson Correlation Tests between Company Experience and Information Collection**

	Number of people asked for information [7]	Number of sources of information used
Sample Size	39	40
Total number of acquisitions completed in last 5 years	- 0154	- 0503
Sample Size	40	41
Lowest number of acquisitions completed in one year in last 5 years	-.2734*	- 0100
Sample Size	40	41
Largest number of acquisitions completed in one year in last 5 years	- 0444	- 0765
Sample Size	40	41
Difference between largest number of acquisitions completed in one year in last 5 years and lowest	-.0210	- 0836
Sample Size	38	29
Total number of acquisitions completed in last 5 years divided by sales	.1641	-.1169
Sample Size	31	31
Total number of acquisitions completed in last 5 years divided by number of people currently working on acquisitions	-.0230	- 1315
* Significant at 10 per cent level		

10.3 Experience and Time

In chapter 5, material from Day and Lord (1991) was presented to the effect that, experienced decision makers categorised decisions more rapidly. This suggested to the researcher the hypothesis: **Experience will lead to greater speed in acquisition decision making.** This section will test this hypothesis for the 5 measures of experience proposed.

The researcher further proposed that 2 elements of time were relevant, elapsed time and man weeks work. Elapsed time taken was aimed at capturing delays and time taken for committees to be formed, and the board to meet. Man weeks work involved in the acquisition was aimed at capturing the time when active work was being conducted as well as the level of management resources committed. This measure, however, must be treated carefully given that the researcher used post event interviews to collect data. The man weeks work data collected must therefore be taken as an impression rather than an accurate figure. This figure may, however, encapsulate the interviewees' perception of how hard they were working at the time. This may be illuminating if not identical to an exact measure of management time consumed.

The researcher also noted that the elapsed time given by companies tended to be 2, 3, 4, 6, 9, 12, 24 months similar to Hickson et al.'s data (1986:102).[8] It is possible this is due to the calendar framing thinking, board meeting times, timetables set by merchant banks, but also that answers were rounded to the nearest period.

Table 10.9, however, does not support the hypothesis that **Experience will lead to greater speed in acquisition decision making,** for the 5 measures of experience used

Box 10.1 **Hypotheses on Experience and Time Taken to Make An Acquisition Decision**

Individual experience

5:13) The greater the number of acquisitions completed by a manager the shorter the elapsed time taken.

5:14) The greater the number of acquisitions completed by a manager the fewer the man hours work involved.

5:15) The greater the number of acquisitions' reviews carried out by a manager the shorter the elapsed time taken.

5:16) The greater the number of acquisitions' reviews carried out by a manager the fewer the man hours work involved.

5:17) The greater the number of years a manager responsible for a project has spent with a company the shorter the elapsed time taken.

5:18) The greater the number of years a manager responsible for a project has spent with a company the fewer the man hours work involved.

5:19) The greater the number of years a manager responsible for a project has spent within an industry the shorter the elapsed time taken.

5:20) The greater the number of years a manager responsible for a project has spent within an industry the fewer the man hours work involved.

Company Experience

5:24) The greater the number of acquisitions completed by a company the shorter the shorter the elapsed time taken.

5:25) The greater the number of acquisitions completed by a company the fewer the man hours work involved.

in this research and the 2 measures of time proposed. These hypotheses shown in box 10.1 **(5:13 to 5:20 and 5:24 and 5:25)** were therefore rejected.

Table 10.9 Results of Pearson Correlation Tests between Experience and Time

	Elapsed time [9]	Man weeks work
Sample Size	35	35
Number of acquisitions' reviews completed by manager	0127	- 1292
Sample Size	34	37
Number of acquisitions' reviews completed by manager that have resulted in an acquisition	-.1292	-.1633
Sample Size	42	42
Years spent at company by individual	.0333	-.1574
Sample Size	42	42
Years spent in industry by individual	-.0113	- 0402
Sample Size	44	39
Total number of acquisitions completed in last 5 years by company	-.1063	-1237
Sample Size	45	41
Lowest number of acquisitions completed in one year in last 5 years by company.	-.1284	-.1891
Sample Size	45	41
Largest number of acquisitions completed in one year in last 5 years by company.	-.1652	-.0123
Sample Size	45	41
Difference between largest number of acquisitions completed in one year in last 5 years and lowest by company.	-.1546	0368
Sample Size	44	39
Total number of acquisitions completed in last 5 years by company divided by sales.	-.0990	- 1683
Sample Size	34	31
Total number of acquisitions completed in last 5 years divided by company by number of people currently working on acquisitions	-.0730	- 2163

Given that no evidence was found to support the hypothesis that: **Experience will lead to greater speed in acquisition decision making,** the researcher thought that this may be an excessively simplistic view of the relationship between decision making speed and time. If managers had a finite amount of time to carry out the work and

fixed man power available, improved speed in certain tasks might show up as reduced time spent on that task and more time spent on another. That is if the simple tasks can be carried out more rapidly rather than the total time taken reduced, time may be diverted to other issues.

This assumes that time is a given. But how managers use it is not and more work can always be carried out. The researcher therefore proposed 3 fairly simple hypotheses:

10:A) Greater experience would lead to less percentage of time being spent on financial analysis.

10:B) Greater experience would lead to less percentage of time being spent on information collection.

10:C) Greater experience would lead to a greater percentage of time being spent on other factors.

These are stated for each of the 5 experience measures used in this research in box 10.2 (Hypotheses 10:4 to 10:19). Only 3 categories were used to divide management time use, because the data collection method was post event interviews. To use more categories may have stretched peoples memories to the point where they gave random answers to get past the question. The data must therefore be treated as an impression not a precise figure. Second it would give a false impression of accuracy. The researcher based the categories on the 2 main processes this research has focused on, information collection and decision making. The other category, it was hoped, would capture issues unique to the acquisition being discussed.

Box 10.2 Hypotheses on Experience and Distribution of Management Time

Financial Work

10.4) The greater the number of acquisitions completed by a manager the lower the percentage of time spent on routine financial work.

10.5) The greater the number of acquisitions' reviews carried out by a manager the lower the percentage of time spent on routine financial work.

10.6) The greater the number of years a manager responsible for a project has spent with a company the lower the percentage of time spent on routine financial work.

10.7) The greater the number of years a manager responsible for a project has spent within an industry the lower the percentage of time spent on routine financial work.

10.8) The greater the number of acquisitions completed by a company lower the percentage of time spent on routine financial work.

Information Collection

10.9) The greater the number of acquisitions completed by a manager the lower the percentage of time being spent on information collection.

10.10) The greater the number of acquisitions' reviews carried out by a manager the lower the percentage of time being spent on information collection.

10.12) The greater the number of years a manager responsible for a project has spent with a company the lower the percentage of time being spent on information collection.

10.13) The greater the number of years a manager responsible for a project has spent within an industry the lower the percentage of time being spent on information collection.

10.14) The greater the number of acquisitions completed by a company the lower the percentage of time being spent on information collection.

Other

10.15) The greater the number of acquisitions completed by a manager the greater the percentage of time spent on other factors.

10.16) The greater the number of acquisitions' reviews carried out by a manager the greater the percentage of time spent on other factors.

10.17) The greater the number of years a manager responsible for a project has spent with a company the greater the percentage of time spent on other factors.

10.18) The greater the number of years a manager responsible for a project has spent within an industry the percentage of time spent on other factors.

10.19) The greater the number of acquisitions completed by a company the greater the percentage of time spent on other factors.

The correlation test results on hypotheses 10:4 to 10 19 are presented in table 10 10 This shows that experienced managers were spending less percentage of their time on financial considerations and more on other factors Only 2 measures of individual experience and the percentage of time spent on financial work are, however, significant Four further results relating to company experience were significant They are, however, not of the direction predicted and imply that experienced companies seem to spend more time on information collection and less on other issues

The results presented on individual experience, particularly of the company, are consistent with the hypotheses presented. That is, experienced decision makers commit a lower percentage of time to financial work than less experienced decision makers The results on company experience are contrary to expectations

These results should be treated carefully as the data was collected post event, in some case up to 3 years after the acquisition. The numbers therefore must be treated as approximations. The results are reflections rather than fact

Research on how both management time and elapsed time are distributed would benefit from a detailed case study work, to provide insight into exactly what, managers spend their time on.

There is, however, no link between how managers said time was spent and success Two of the 3 success measures were negatively related to the percentage of time spent on routine financial work These relationships, however, were not significant [10]

Table 10.10 **Results of Pearson Correlation Tests between Experience and Distribution of Time**

	Percentage of time spent on routine financial considerations	Percentage of time spent on collecting information	Percentage of time spent on non-routine considerations
Sample Size	27	23	24
Number of acquisitions' reviews completed by manager	-.2792	.1301	.1208
Sample Size	29	25	26
Number of acquisition's reviews completed by manager that have resulted in an acquisition	-.2879	.1156	.1123
Sample Size	33	28	29
Years spent at company	-.3320*[b]	.2286	-.0510
Sample Size	33	28	29
Years spent in industry	-.3259*[a]	.2170	-.1230
Sample Size	31	27	29
Total number of acquisitions completed in last 5 years by company.	-.0503	.2985	-.0736
Sample Size	33	29	29
Lowest number of acquisitions completed in one year in last 5 years by company.	-.0375	.0870	.0863
Sample Size	33	29	29
Largest number of acquisitions completed in one year in last 5 years by company.	.1253	.3186*	-.2586
Sample Size	33	29	29
Difference between largest number of acquisitions completed in one year in last 5 years and lowest by company.	.1345	.3667**	-.3480*
Sample Size	31	27	29
Total number of acquisitions completed in last 5 years by company divided by sales.	.09381	.2471	-.3204*
Sample Size	29	26	25
Total number of acquisitions completed in last 5 years divided by company by number of people currently working on acquisitions.	.0875	.1577	.1276

**	Significant at 5 per cent level	*	Significant at 10 per cent level
a	Significant at 6.4 per cent level	b	Significant at 5.9 per cent level

Note - In some cases the answers given did not add up to 100

10.3.1 Section Summary

This section has found no evidence to suggest that experienced decision makers take less time to make decisions. The author has proposed that the time available was fixed Given this, if experienced decision makers could carry out certain tasks more rapidly, it was proposed, this would show up in which areas managers devoted time to Given the data collection method, post event interviews, a simple 3 part division was proposed, routine financial work, information collection and other. It was found that greater individual experience of the industry and company were negatively correlated with time spent on financial work However, the evidence on company data was contrary to that expected. Companies experience of acquisitions were negatively correlated with the percentage of time spent on non-routine considerations and positively correlated with information collection time.

This leaves the final issue this thesis will examine; the effect of the availability of management resources and the use of external consultants as a substitute on the likelihood of success.

10.4 Management Resources

The first part of this chapter examined the experience of the manager responsible for a project and how this affected success and the time taken. That is, the skill of the individual and the company. This section will examine the view that 2 heads are better than one, however skilled and experienced the one is.

Chapter 5 proposed that the greater the management resources available to examine an acquisition the greater the probability of success. This resulted in hypotheses 5.26 and 5.27 being generated.

5:26) The greater the volume of management time devoted to a project the greater the success level.

5:27) The greater the number of people dedicated to working on acquisitions the greater the success level.

It was also proposed given Hunt's findings that

5:28) The greater the elapsed time spent on an acquisition the greater the success level.

Hypotheses **5:26** and **5:27** assume that the only management resources being used to consider an acquisition are internal to the company. The use of outside consultants as a substitute will be considered in section 10.5. This section, however, will focus on the above 2 hypotheses. Table 10.11 presents the results of testing hypothesis **5:26** and **5:27.**

Table 10.11 Results of Kendall Rank Correlation Tests between Success and Management Resources Used and Available

	General success measure [11]	First specific success measure	Second specific success measure
Sample Size	34	29	42
Man weeks work spent on project	-.2339*	-.0200	-.1242
Sample Size	31	25	37
Number of staff currently working on acquisitions	- 2005	0311	- 1883
Sample Size	37	30	46
Elapsed Time	0283	2230	- 0172
* Significant at 10 per cent level			

Only 1 of the relationships presented is significant. This result and the majority of the correlations between man weeks work, number of staff currently working on acquisitions and success are, however, of the opposite direction to that predicted. That is, more work and more people means less success.

Thus the researcher concluded that there was insufficient evidence to support the hypothesis that **The greater the volume of management time devoted to a project the lower the success level,** however, hypothesis 5:26 could be rejected. These measures, however, fail to take account of the complexity of the task faced or the use of external resources such as consultants.

The researcher further examined the proposed relationship, by standardising for relative size of the acquisition at under 2 per cent of sales. This attempts to take account of the importance of the acquisition to a company. No significant relationships were found.[12]

Kitching (1972,1973) suggested that the work required to conduct an acquisition is not linked to the size of the acquisition. Thus in chapter 5 the researcher contended that, the number of acquisitions conducted could represent a measure of demand on management resources. It was therefore proposed that:

5:30) Success will be positively related to the number of staff available for acquisitions divided by the total number of transactions reported in the last 5 years.

The evidence in table 10.12 shows no support for this hypothesis. The only significant correlation coefficient is negative indicating that the fewer managers dedicated to acquisitions, compared to the number of acquisitions completed, the greater the success. Hypothesis **5:30** was thus rejected.

To take account of peaks in demand on management resources the researcher proposed the hypothesis that:

5:31) Success will be positively related to the number of staff available for acquisitions divided by the highest number of transactions reported in any of the last 5 years.

The evidence on this shown in table 10.12 is similar to that on hypothesis 5:30. That is, the number of people available seems to have a negative impact on the performance but this is only significant in one case. It is possible this is a product of the small sample size not being large enough to investigate this adequately or that companies with larger numbers of managers dedicated to working on acquisitions, have higher targets for acquisitions and thus rate them as less successful than companies with fewer dedicated staff. The researcher, however, concluded that further interpretation of this result was not warranted given the nature of the correlations. The researcher thus rejected hypotheses **5:31.**

Table 10.12 Results of Kendall Rank Correlation Tests between Success and The Number of Staff Currently Working on Acquisitions Divided by The Number of Acquisitions Conducted in The Last Five Years

	General success measure	First specific success measure	Second specific success measure
Sample Size	29	25	35
Number of staff currently working on acquisitions divided by number of acquisitions conducted in last 5 years	-.1926	-.0611	-.2010 *
Sample Size	29	25	35
Number of staff currently working on acquisitions divided by largest number of acquisitions conducted in any one years in the last 5 years	-.1615	- 1197	- 1835
* Significant at 10 per cent level			

These measures are however still simple and do not take account of the number of operating units and countries involved or the number of people and complexity of markets.

The lack of a relationship between management time expended on examining a potential acquisition and success could also imply that time was being used to carry-out tasks that had no bearing on success. Time spent on an acquisition was significantly correlated with the length of report produced[13].

In a similar vein it was put forward that resources available would be dependent on the size of the organisation and not the needs of an acquisition programme.

5:29) The larger the sales of a company the more people there will be available to work on an acquisition.

The evidence in table 10.13 clearly supports hypothesis 5:29. The researcher concluded that the management resources available was related to the size of the company and not the number of transactions. The researcher also concluded that the use of management time and the management resources available was not worth further examination in this thesis, as to examine it effectively a detailed case study approach is required, to build up a description of how managers use their time and how they say they used it afterwards.

Table 10.13 **Results of Pearson Correlation Tests between Size and Management Resources Available**

	Number of staff currently working on acquisitions.
Sales for last set of accounts	.6837 ****
Sample Size	40
Sales for penultimate set of accounts	7106 ****
Sample Size	40
Sales for anti- penultimate set of accounts	.7010 ****
Sample Size	40
Total number of acquisitions	.0185
Sample Size	36
Minimum Number of acquisitions in one year	.1183
Sample Size	37
Maximum Number of acquisitions in one year	-.0026
Sample Size	37
**** Significant at .1 per cent level	

10.4.1 **Section Summary**

This section has examined the hypothesis that the management resources available to carryout an acquisition review will influence the success of an acquisition. Limited evidence for a simple negative relationship was found. This, however, was inconclusive. The researcher, however, considers this is because no adequate way to reflect the size and demands of the task were included. The researcher did find that the number of staff currently working on acquisitions was related to the size of the company but not the number of acquisitions conducted. The researcher will now examine the associated effect of the use of consultants who can in certain circumstances be used as substitutes for internal resources.

10.5 Consultants Used

Chapter 5 proposed that the use of consultants would lower success levels because they have different priorities to the acquiring company and that their advice might be motivated by the consultancy company's profits and not their client's best interest.

The literature, however, seems to assume that the consultants in question fit into 3 basic groups, merchant or investment banks, strategy consultants or, specialist mergers and acquisitions consultancies. As table 10.14 shows, most companies are using a variety of consultants. A number stated that their use of merchant or investment banks did not aid analysis but that they were used to sell the deal to the stock market.

One company said : 'All they, *(name of company's merchant bank)* did was put their name to the circular to shareholders.' [14]

A second said: 'It is a funding thing, if you have got a class one or a super class one which require shareholder approval, or you have got one which involves issuing shares or a rights issue then, certainly our merchant bank would be involved then.'

A third stated: 'We use our merchant bank *(name of company's merchant bank)* as advisers, but not in advising us about the qualitative aspects of an acquisition. It would tend to be more to do with the market response to it, or whether it is a class one circular, and what to put out. The technical aspects.'

Many of the companies said they would only use a merchant bank occasionally when they wanted to make a right's issue. But 31 said they had used a merchant bank on some occasions, primarily to deal with the city.

Additionally, all companies said they used their auditors to carry-out due diligence work. This, however, was post agreement to check any information that had been supplied was accurate. No company said they would use their auditors before making a decision.

Table 10.14 **Types of Consultant Used by Companies**

Type of Consultant	Number of companies who said they used this type of consultant
Merchant Banks	31
Environmental Consultants	22
Property	17
Industry Specialists including geologists	9
Strategy consultants	9
Tax	4
Pensions	3
Market Research Companies	3

The consultants used were typically used to advise on specific areas where the company did not maintain resources. This can be seen in the large numbers of companies using environmental, property, tax, and pensions consultants and industry specialists including geologists. The importance of this type of consultant over investment bankers is further illustrated by the quotes below.

One company:' Accounting firms. We don't use accounting firms. We have used the so called boutiques from time to time but with less success ...If we have an environmental concern on an acquisition we would use environmental consultants.'

Another company: 'We might use specialist consultants , where appropriate.... We might use it in certain industries, in some of the more technical areas particularly in our (Name of Industry) division we might use a radio consultant, if there was a particular issue for example.'

A third 'We would ask environmental specialists to review that particular aspect of acquisitions, and we do have a property service manager and he would become involved when it became appropriate As far as the legal conveyancing is concerned that would be done by the lawyers, but he would go and look over the place and if it wasn't over worked he would survey it himself, but if he didn't he would get someone else to do it.'

One company did say that they used merchant banks but, most consultancy work was done by specialists:

'Depending what type of acquisition it is we would speak to merchant banks quite regularly If we are going into markets where we have not had a great deal of experience then we would. For example, Eastern Europe, I know last year we commissioned a study, from some consultancy who purported to be Eastern European experts, normal stuff, market share, countries economy, business opportunities, etc etc. viability of various industries behind the former Iron Curtain '

Strategy consultants played a minor part in the acquisitions studied. Consultants were used to provide a report and exit In conclusion the type of consultants used by the companies interviewed were primarily providing narrow technical advice, not controlling the process as many consultant-prescriptive authors would hope

10.5.1 Use of Consultants and Success

Having examined what consultants were used, and found they were mainly technical, property or environmental, the researcher will now examine the hypothesis **(5:32)** that, **The greater the number of different consultants used the lower the success level,** as proposed in chapter 5 The evidence on this presented in table 10 15 gives no support to this hypothesis the researcher therefore rejected it

Table 10.15 Results of Kendall Rank Correlation Tests between The Number of Different Types of Consultants Used and Success

	General Success Measure [15]	First Specific Success Measure	Second Specific Success measure
Sample Size	35	27	40
Number of different types of consultant used	.1176	.0727	- 0863

One possible explanation for this lack of relationship is that the authors, particularly Haspeslagh and Jemison (1991), were not considering the type of consultants that companies were found to use in this research. When Haspeslagh and Jemison(1991) proposed that poor advice might lead to acquisitions performing worse they seem to have been focusing on investment or merchant banks. Given that the researcher interprets that the authors were primarily considering merchant banks paid on a completion fee basis, he proposes that:

10:20) Companies that used merchant banks as consultants would perform worse than other companies.

Another possible hypothesis that: Companies that used strategy consultants would perform worse than other companies, was not tested because of the small number of companies stating they used them.

The evidence on hypothesis 10:20 table 10.16 is inconclusive. There is clear evidence to suggest that the use of merchant banks by companies resulted in worse performance on the variables that companies considered important, those incorporated into the first specific success measure. However, for the criteria included in the general and second specific success measure (which were imposed by the researcher, return on investment, effect on earnings per share, effect on group share price, cash flow sales growth) there are 2 and 1 significant relationships respectively. The researcher therefore sees this as an area for further research with a larger sample size.

Table 10.16 **Results of Chi-Squared Tests between Use of Merchant Banks as Consultants and Success**

Company used a merchant bank as a consultant and first specific success measure divided at	Minimum expected frequency [16]	Probability of distribution occurring by chance
3.5	3.6	.40576
3.6	4.0	.22559
3.7	4.9	.14264
3.8	5.6	.04694** ♣
3.9	6.3	.00539***♣
4.0	5.4	.01041** ♣
4.1	5.4	.01041** ♣
4.2	4.9	.02373** ♣
4.3	4.9	.05237 * ♣
4.4	4.0	.10695
Sample size 29 with one degree of freedom		

Company used a merchant bank as a consultant and general success measure divided at	Minimum expected frequency	Probability of distribution occurring by chance
2.5	2.5	1
2.7	3.5	1
2.9	3.5	1
3.0	4.2	1
3.1	4.9	.95409
3.2	5.6	.79254
3.3	6.3	.82318
3.4	6.3	.82318
3.5	5.6	.79254
3.6	4.6	.75509
3.7	3.8	.46455
3.8	3.5	.27486
3.9	2.8	.09999* ♣
4.0	1.9	.04232** ♣
4.1	1.4	.11474
Sample size 37 with one degree of freedom		

Table 10.16 Continued **Results of Chi-Squared Tests between Use of Merchant Banks as Consultants and Success**

Company Used A merchant Bank as a consultant and second specific success measure divided at	Minimum expected frequency	Probability of distribution occurring by chance
3.0	3.2	.43902
3.1	4.9	.73277
3.2	4.9	.73277
3.3	6.5	.72908
3.4	6.6	.54267
3.5	7.0	.54777
3.6	7.8	.63241
3.7	9.0	.53971
3.8	7.0	.51032
3.9	5.7	.13461
4.0	4.5	.03052 *♣
Sample size 44 with one degree of freedom		
♣ Direction of relationship negative		

10.5.2 Use of Consultants and Time Taken

The second other hypothesis proposed in chapter 5 concerning consultants was that, **5:33) The greater the number of different consultants used the shorter the elapsed time taken.** This was based on the view that the main group of consultants used by companies would be merchant banks on win fees. Table 10.17 shows no relationship between the number of different types of consultants used and time taken

Table 10.17 Results of Pearson Correlation Tests between Time and Use of Consultants

	Management time spent on acquisitions	Elapsed Time
Sample Size	41	44
Number of different types of consultant used	0506	1038

Note - Pearson correlations coefficients given not probabilities

The researcher therefore restated hypothesis 5:32 as: 10:21) Companies which used merchant bankers as consultants will take less time to conduct acquisitions.

The evidence on hypothesis 5:33 in table 10.18 shows there is a significant relationship between the use of merchant banks and man weeks work used before a decision. Table 10.19, however, shows that this relationship is not linear. That is, companies that used merchant banks as consultants conducted the most acquisitions that took less than 25.5 man weeks work and those which took more than 69 man weeks work.

Given this relationship, the researcher conducted a limited sensitivity analysis. It was not possible to use a wide range of values for the division of the amount of man weeks put into the acquisition before the decision because this would have resulted in the minimum expected frequency falling below 5[17]. The results of this are shown in table 10.18.

Table 10.18 Results of Chi-Squared Tests between Use of Merchant Banks as Consultants and Time Taken to Conduct an Acquisition

Company used a merchant bank as a consultant and length of taken divided at:	Minimum expected frequency	Probability of distribution occurring by chance
3	3	68299
4	4.4	1.0
5	7	21704 +
6	7.4	13810 +
8	9.6	16548 +
9	8.7	18422 +
10	5.3	61429
4.25 and 10	5.3	61275
4.25 and 9	5.7	39898
5 and 10	5.3	46678
Sample Size 48		
Company used a merchant bank as a consultant and man weeks work used divided at	Minimum expected frequency	Probability of distribution occurring by chance
40	8.2	46676
50	10	54483
25.5 and 69	5	01565**♣
25.5 and 101	5	03688**
30 and 90	5.9	12199
Sample Size 44		

♣ Cross tabulation table shown in table 10.19

\+ Companies which used merchant banks tended to take less time

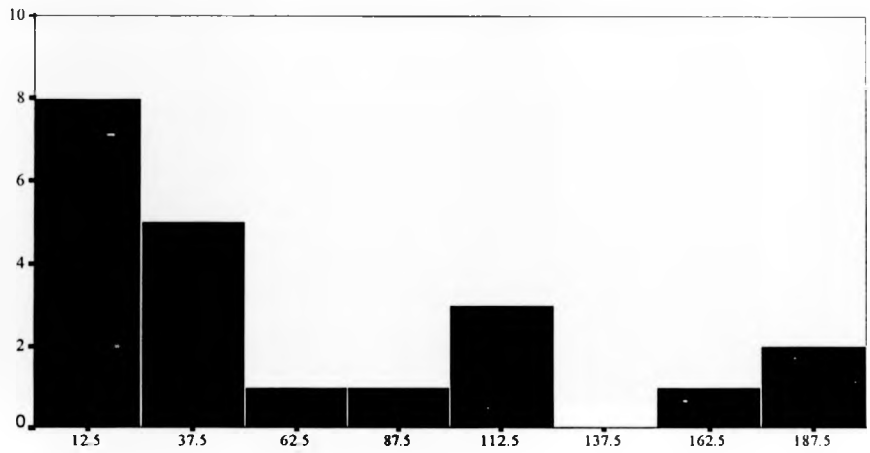
** Significant at 5 per cent level

Table 10.19 **Contingency Table for Use of Merchant Banks as Consultants Against Number of Man Weeks Work**

	Below 25.5	25.5 to 69	69 and Above	Total
Companies which did not use merchant banks as consultants	2	11	7	20
Companies which used merchant banks as consultants	9	4	11	24
Total	11	15	18	44

One possible explanation for this is that some of the companies that used merchant banks included the bankers' time in the time figure they gave and others did not. Another possible explanation, for the division of companies who used merchant bankers falling into 2 groups, illustrated in figure 10.1, is that those acquisitions that took a small amount of work were those which were actively for sale. Those which took a large volume of work were those which were hostile. For the latter, there may be no information available and the company is using a bank to collect information and conduct an investor relations campaign with both the companies and the target's shareholders. In the former case the information may be given to the company by a selling bank. It is possible that this relationship is a chance one. The evidence thus does not support a simple relationship between time, both elapsed and man weeks work and the use of a merchant bank as an adviser. No relationships between elapsed time and use of merchant banks as a consultant were found. A kinked relationship between man weeks work used on the acquisition before the decision was made, and use of a merchant bank was found. This relationship was not totally robust to flexing the points at which the variable was divided, as only limited flexing of the variables coding was possible while still maintaining a minimum expected frequency above 5 in the chi-squared tables. It is thus difficult to determine if the relationship is a random one or significant.

Figure 10.1 Histogram of Man Weeks Work for Companies Which Used Merchant Banks as Advisers



Note - 3 outliers that had man weeks work figures over 200 were excluded from the histogram to allow a reasonable representation of the rest of the data.

This result is similar to the evidence on hypothesis that:

7:3) Acquisitions resulting from ideas generated externally will take less elapsed time to complete.

support for this hypothesis was found but not the hypothesis that:

7:4) Acquisitions resulting from ideas generated externally will take less man weeks work to complete.

It is difficult to make a clear conclusion from the data collected on external involvement and elapsed time. The researcher, however, proposes that merchant banks are used in 2 instances. One, to act as an interface with another merchant bank when biding for targets which are actively for sale will conclude rapidly; or 2, where the bid

is hostile and during the bid the company is using a bank to conduct an investor relations campaign and advise on bidding tactics. These acquisitions may have long gestation periods.

10.5.3 Section Summary

This section has examined the hypothesis that companies that used more consultants would perform worse. This view was rejected. The researcher proposed that this could be because the authors proposing this hypothesis were expecting companies to primarily use merchant banks, rather than more specialist consultants that covered narrow topics as was found. The hypothesis was therefore restated to focus on merchant banks. There was clear evidence to support this for one of the success measures used. However, this did not hold for the other 2 measures. The second hypothesis proposed that the use of consultants would result in a shorter time being taken and this produced similar results. No relationship was established between the number of consultants and either measure of time used in this research, elapsed or man weeks work. However, a relationship between man weeks work and the use of merchant banks as consultants was found. This however was kinked. The researcher is unclear why this is. One possible explanation is that companies used banks where another bank was conducting a sale and the process was relatively simple. While banks were also used in hostile acquisitions to act as an interface between the company and its shareholders and the shareholders of the target company, which required extensive amounts of man power to conduct.

10.6 Chapter Summary

This chapter has focused on 2 issues that the literature proposed might influence success and the acquisition process; experience of the project manager and the company and management resources including the use of consultants as a substitute for internal resources. Individual and corporate experience of acquisitions were not found to effect success or information collection. Experience of the company and industry by individuals measured in years was found to be correlated with greater success and use of more information sources. However, no evidence of experience affecting the time taken to complete an acquisition was found.

To further explore this the researcher examined how management resources were distributed between 3 broad areas, information collection, financial analysis and other. Experience of the company and industry by the individual was found to be negatively correlated with this. The evidence on company experience, however, conflicted with this. No evidence for a simple relationship between resources and success was found. The researcher, however, considered that this might be because no adequate measure of demand could be constructed.

The final area this chapter examined was the use of consultants. It was found that the number of consultants used did not effect success levels or the time taken to conduct an acquisition.

The researcher felt that the authors these hypotheses were based on particularly Haspeslagh and Jemison (1991), were thinking of merchant banks when they proposed this view. The researcher thus restated the hypotheses,

5:32) The greater the number of different consultants used the lower the success level, as 10:20) Companies that used merchant banks as consultants would perform worse than other companies. Clear evidence was found to support

hypothesis **10:20** for one success measure but only very limited evidence for the other 2. The relationship between the use of merchant banks and the management time used by the company to make a decision was found to be kinked with companies that used merchant banks mainly falling at the 2 ends of the distribution.

The last 4 chapters have focused on 4 areas:

A) information collection and the source of the idea

B) the decision criteria used

C) the relationships between the decision criteria used and success

D) the effect of experience and management resources on the process

In the next chapter the researcher will attempt to tie these together to the literature. He will also propose directions for future research. The final section of this chapter lists the hypotheses covered in this chapter and the results of testing them.

10.7 Hypotheses Covered in This Chapter

Experience and Success

Experience of acquisitions will increase success levels.

This was tested as:

5:1) The greater the number of acquisitions completed by a manager the greater the probability of an acquisition being successful.

5:2) The greater the number of acquisitions' reviews carried out by a manager the greater the probability of an acquisition being successful.

There was no evidence to support hypotheses 5:1 and 5:2.

5:3) The greater the number of years a manager responsible for a project has spent with a company the greater the probability of an acquisition being successful.

5:4) The greater the number of years a manager responsible for a project has spent within an industry the greater the probability of an acquisition being successful.

There was evidence to support hypotheses 5:3 and 5:4 for both specific success measures.

Experience and Information Sources

Expert decision makers use a greater number of information sources, and; Expert decision makers ask more people for information.

These were stated in 8 forms, incorporating individual experience of the company, industry, completed acquisitions and acquisition reviews. No evidence was found to support these hypotheses except the hypothesis that:

5:12) The greater the number of years a manager responsible for a project has spent within an industry the greater the number of people asked for information.

Experience and Time Taken

Greater experience will lead to a shorter elapsed time being taken.

Greater experience will lead to fewer man hours work being required.

These were be tested with experience defined as, the number of acquisitions completed, the number of acquisitions' reviews carried out, the number of years a manager responsible for a project has spent with a company, and the number of years a manager responsible for a project has spent within an industry.

These hypotheses **(5:13 to 5:20)** were rejected. As a result the researcher generated hypotheses **10:4** to **10:18**

Financial Work

10:4) The greater the number of acquisitions completed by a manager the lower the percentage of time spent on routine financial work.

10:5) The greater the number of acquisitions' reviews carried out by a manager the lower the percentage of time spent on routine financial work.

There was limited evidence to support these 2 hypotheses it however was not significant

10:6) The greater the number of years a manager responsible for a project has spent with a company the lower the percentage of time spent on routine financial work.

10:7) The greater the number of years a manager responsible for a project has spent within an industry the lower the percentage of time spent on routine financial work.

There was evidence to support these 2 hypotheses. However, it was only significant at the 6.4 and 5 9 per cent levels respectively.

Information Collection

There was no evidence to support the hypothesis **(10:9 to 10:13)** that: **the greater the experience of the manager responsible for a project the lower the percentage of time spent on information collection**, for the 4 measures of individual experience used in this research. The correlations that did exist although not significant were of the opposite direction to that predicted

Other

No significant evidence was found to support the hypothesis that: **The greater experience of manager the greater the percentage of time spent on other factors,** for the four measures of individual experience used in this research.

Company Experience

5:21) The greater the number of acquisitions completed by a company the greater probability of an acquisition being successful.

There was no evidence to support this hypothesis. Given this the researcher tested sub-hypotheses defining company experience as: **the minimum number of acquisitions conducted in any of the last 5 years , the highest level of acquisitions conducted in the last 5 years, the range between the highest and lowest levels of activity over the last 5 years .** There was no evidence to support these hypotheses.

5:22) The greater the number of acquisitions completed by a company the greater the number of information sources used.

5:23) The greater the number of acquisitions completed by a company the greater the number of people asked for information.

There was no evidence to support these hypotheses.

5:24) The greater the number of acquisitions completed by a company the shorter the shorter the elapsed time taken.

5:25) The greater the number of acquisitions completed by a company the fewer the man hours work involved.

The above 2 hypotheses were rejected.

10:8) The greater the number of acquisitions completed by a company lower the percentage of time spent on routine financial work.

There was no evidence to support this hypothesis.

10:14) The greater the number of acquisitions completed by a company the lower the percentage of time being spent on information collection.

There was limited significant evidence to support the opposite hypotheses to Hypothesis **10:14,** that is

The greater the number of acquisitions completed by a company the greater the percentage of time being spent on information collection.

10:19) The greater the number of acquisitions completed by a company the greater the percentage of time spent on other factors.

There was limited significant evidence to support the opposite hypotheses to Hypothesis **10:19,** that is

The greater the number of acquisitions completed by a company the lower the percentage of time spent on other factors.

Management Resources and Success

5:26) The greater the volume of management time devoted to an acquisition the greater the success.

This hypothesis was rejected

5:27) The greater the number of people dedicated to working on acquisitions the greater the success.

There was no evidence to support this hypothesis.

5:28) The greater the elapsed time spent on an acquisition the greater the success level.

There was no evidence to support this hypothesis

5:29) The larger the sales of a company the more people there will be available to work on an acquisition.

The results of a correlations test on this hypothesis were significant at the 1 per cent level for the sales reported in the last 3 sets of accounts.

5:30) Success will be positively related to the number of staff available for acquisitions divided by the total number of transactions reported in the last 5 years.

The correlation coefficients on the tests on this were small but negative That is success was negatively related to the number of staff available divided by the number of transactions. Thus hypothesis 5 29 was rejected

5:31) Success will be positively related to the number of staff available for acquisitions divided by the highest number of transactions reported in any of the last 5 years.

This hypothesis was rejected as, like hypothesis 5:29, the correlations were of the opposite direction predicted.

Consultants

5:32) The greater the number of consultants used the lower the success level.

The evidence on this presented in table 10.15 gave no support to this hypothesis. The researcher therefore rejected it.

10:20) Companies that used merchant banks as consultants would perform worse than other companies.

Clear evidence was found to support this hypothesis for one success measure only very limited evidence for the other 2.

5:33) The greater the number of different consultants used the shorter the elapsed time taken. No evidence was found to support this hypothesis.

10:21) Companies that used merchant bankers as consultants will take less time to conduct acquisitions.

There was a significant relationship between the use of merchant banks as consultants and man weeks work used before the decision. However, this was kinked. That is, companies that used merchant banks as consultants conducted the majority of acquisitions that took less than 31 man weeks work and those which took more than 90 man weeks work. The researcher proposed that this was because acquisitions involving merchant banks fell into 2 distinct groups. Sales, where all information was available, and hostile deals where no information was available.

Footnotes

[1] For a full list of the hypotheses examined in this chapter see section 10.7

[2] For the data used in this research for the five year period the, Mean 14.000, Median 11.000 Standard deviation 12.994, Minimum 1.000 and Maximum 78.000. This compares to Kusewitt's(1985) data with a mean of 2.55 per year, and a range of .3 to 15.3. For five years this would be 12.75 1.5 and 76.5.

[3] Hypotheses 5:9 to 5:12 are

5.9) The greater the number of years a manager responsible for a project has spent with a company the greater number of information sources used.

5.10) The greater the number of years a manager responsible for a project has spent with a company the greater number of people asked for information.

5.11) The greater the number of years a manager responsible for a project has spent within an industry greater number of information sources used.

5.12) The greater the number of years a manager responsible for a project has spent within an industry greater number of people asked for information.

3 The table below shows the correlation coefficients for the three success measures and percentage of time spent on routine financial work.

[4] Numbers quoted are Pearson correlation coefficients.

[5] Numbers quoted are Pearson correlation coefficients.

[6] Numbers quoted are Pearson correlation coefficients.

Numbers quoted are Pearson correlation coefficients.

[8] Frequencies of elapsed times are given below. It's mean was 9.095, median 6.000, and standard deviation 8.364.

Value	Frequency	Value	Frequency	Value	Frequency
1.3	1	4.0	5	9.0	8
1.5	1	4.5	2	12.0	6
2.0	3	5.0	1	14.0	1
2.5	1	6.0	8	24.0	5
3.0	3	7.0	1	48.0	1
3.5	1	8.0	2		

[9] Numbers quoted are Pearson correlation coefficients.

[10] Percentage of Time Spent on Financial Work and Success

	General success Measure	First specific Success Measure	Second Specific Success measure
Sample Size	29	25	33
Percentage of time spent on routine financial considerations	1326	-.1832	-.1473

Note - Kendall rank correlation coefficients given.

[11] Kendall rank correlation coefficients given.

[12] Success and Management Resources Available and Used for Acquisitions which were less than Two Per Cent of the Buyers Sales

	Man weeks work devoted to acquisition	Number of people currently working on acquisitions
General Success Measure	-.4121	-.0166
Sample Size	16	18
First Specific Success Measure	-.1929	-0263
Sample Size	14	16
Second Specific Success Measure	-.2623	-.2140
Sample Size	18	21

Note - Kendall rank correlation coefficients given.

[13] Correlation coefficient .5098, significant at less than .1 per cent level.

[14] Italics added.

[15] Results given are Kendall rank correlation coefficients.

[16] Where minimum expected frequency is below 5 a Fisher Exact test result is presented.

[17] Fisher exact test is only valid for 2 by 2 contingency tables.

Chapter 11 REVIEW AND CONCLUSIONS

The main purposes of this thesis were to examine how companies made the decision to acquire another company, and to identify best practice. This thesis focused on 3 areas, the information collection and search phase, the decision criteria, and the influence of management resources and experience on this process. Negotiations were explicitly excluded.

The rationale behind this study was that, while many billions of pounds are spent by managers in the United Kingdom on acquisitions each year, relatively little research existed directly on this topic. A framework was developed from research material which focused directly on the acquisition decision process and was used to structure the rest of the thesis. (Chapter 1)

The extensive capital markets literature on acquisitions failed to provide a detailed base upon which to build this research. It did, however, provide a background to allow some variables to be controlled for and place other material in context. (Chapter 2)

Literature from a number of areas including that on decision-making, strategic decisions and finance was therefore used to develop substantive hypotheses on: limits to the acquisition search domain, information collection, the decision criteria used, management resources used, and experience. (Chapter 3, 4, and 5)

Chapter 6 explored the potential methods available to conduct this research. It concluded that structured interviews with a subjective success measure were best suited to examining the issues and hypotheses developed in chapter 4, 5 and 6.

Chapter 7 explored the characteristics of company searches and how they looked for acquisitions using some descriptive material as well as testing the hypotheses developed in chapter 3. All except one company was found to limit its acquisition searches to the industries within which they already operated. The situation with respect to geographic limits to acquisition searches was more varied. Acquisitions by companies which limited their acquisition searches by geography performed better. Internal ideas were found to be significantly more successful than external ones.

Chapter 8 showed that although most companies were using discounted cash flow techniques these were not the only methods used. One company was found not to be using any of the five conventional capital appraisal techniques: payback, accounting rates of return, net present value, earnings per share and internal rate of return. Most companies also employed non financial criteria in their decision making process.

The analysis presented in chapter 9 concluded that the use of discounted cash-flow did not affect success levels, although there were significant results with one success measure to suggest it was associated with a lower success level. This issue was further explored using descriptive and quantitative material to develop potential explanations:

- The result is inaccurate.
- DCF methods were not applied correctly. Specifically, fixed hurdle rates are being used and these are not changed frequently.
- Companies using NPV did produce superior results, but companies using IRR did not because of its flaws and this reduced the overall success level of companies using DCF methods.
- Companies are using DCF techniques but the results are ignored in the decision process.
- DCF is being used as a substitute for analysis.

It was not possible to reject any of these proposed explanations for the lower success levels associated with use of discounted cash-flow measures.

The descriptive material, however, showed that few companies were following the process proposed by the finance literature, using only net present value as a criterion with a discount rate established specifically for that acquisition. This chapter also tested the hypotheses developed in chapter 4 yielding mainly negative results .

The empirical content of this research was concluded by an exploration of 3 topics: experience, management resources, and use of consultants, which prior research suggested might influence the process and acquisition success. A variety of measures of experience developed in chapter 5 were examined. It transpired that no measure of experience of acquisitions affected success. Individual experience of the industry and company was found to be correlated with increased success.(Chapter 10)

The empirical analyses presented in chapters 7, 8, 9 and 10 each illuminated a different part of the acquisition process or a series of factors which influenced the process. The main purposes of this chapter (11) are to draw these results together, to reconcile these with the literature and indicate some possible future directions for research. Before proceeding with these the researcher will highlight some key findings.

11.1 Search Area

All except one company limited the areas searched for acquisitions to those areas within which they already operated. There was, however, a great deal of variation in how narrowly focused these limits were. The geographic limits had more explicit variation with some companies not limiting the geographic areas in which they acquired. This was found to be correlated with lower levels of success. This is in direct contradiction of the predictions of the Rational Economic Man concept. These

findings would fit with Simon's(1976) concept of bounded rationality. Those companies which did not explicitly limit their acquisition search area by geography, were possibly being affected by the cognitive limits of individuals, equally it could suggest the structure of the organisation did not allow knowledge of all geographic markets and of the acquisitions process to be effectively combined. It also implies that companies may not be able to pursue truly global strategies effectively with their present structures.

11.2 Ideas and Number of Options Considered

Acquisitions resulting from internal ideas were found to be more successful than acquisitions resulting from ideas generated outside the company. The consideration of each acquistion idea in isolation so reducing opportunities to compare potential acquisitions may be a factor in this. This relationship could be because:

1) Some companies are actually following narrower and more focused strategies than they are presenting to the outside world, or their Boards realise. This leads outside advisers and sellers to present ideas to the board who commit the organisation to an idea, in principle, which could not have resulted from an internal idea. Internal ideas are usually limited to areas the company already operates in because operating units do not have the time to conduct searches outside these areas. In terms of Mintzberg's(1978) perspective, if the sum of division strategies are realised as intended, some of the organisation's intended strategy will be unrealised. Acquisitions stimulated by external ideas which fit into this gap will have an increased probability of failure because the divisions of the organisation do not have the skills and resources to understand the proposed acquisition or operate the proposed acquisition. That is the division has a strategy and only has the resources to operate effectively within the areas this defines. The centre of the organisation may perceive these limits differently

or try to define them in a different way leaving a gap. For example an operating division may define itself as a road haulage operation, the centre may perceive it as a transport operation and present this to the outside world. Given this limit an outsider might offer the organisation a rail-freight operation, which the operating unit is unable to manage.

2) Outsiders are stretching corporate strategies to fit with what they have to sell and this is not being picked up. That is there are agency problems between the company and its advisers, who have incentives to operate in a way which may not be in the interest of the company. A board may make over optimistic assessments of its and the companies operational managers abilities to manage another business, without considering in detail the generalizeability of their skills.

3) External ideas follow a different process. Ideas may go directly to board directors who are unable to effectively evaluate and understand the detailed consequences, or conduct detailed financial analysis.

4) Commitment. Units which have to run operations are not committed to external ideas. They thus may run operations down, not carry out expansion plans, and blame head office staff for problems.

The evidence collected in this research supports points 1, 3 and 4. Option 2 is feasible, but may be difficult to prove without a longitudinal study.

11.3 Information Collection

The main sources of data used by companies to collect information on acquisitions was internal or from the target, either through direct access or an information memorandum. Few companies used 'City' information sources.

The level of information collection and type of information sources used was found not to affect success levels. This could fit Simon's (1976) Administrative Man model where decision makers have cognitive limits, which in some cases, although not in others, are being reached. Equally extra information may still have value but this is small and the success measure is unable to detect this. It is therefore difficult to draw any specific conclusions from this.

11.4 Decision Criteria Used

In spite of the prescriptions of the finance literature the information collected was processed in a variety of ways and subjected to a number of criteria. Just 6 companies used only discounted cash flow measures. However, 41 used discounted cash flow measures together with other measures. The use of discounted cash flow measures did not increase success levels. Attempts to test hypotheses to explain this were inconclusive.

The use of other capital budgeting techniques did not influence the success measure to a significant degree. Earnings per share was significantly negatively correlated with the second specific success measure, and the general success measure for 2 tests out of 7, but not the first specific success measure[1]. Payback and accounting rate of return

were significantly positively correlated with the first specific success measure for 1 valid test, but not for all other tests conducted using different dividing points to convert success into a dichotomous variable. The tests with the other success measures produced no significant results.

The decline in importance of payback as a criteria shown in Pike's research (1983,1988) was reinforced by this research. Although commonly used it was only used in conjunction with discounted cash flow or earnings per share criteria Criteria apart from the five main financial criteria seem to have played only a minor role in decision making.

11.6 Internal Resources

No evidence of any relationship between the success measures used and management resources available for acquisitions was found. The only factor found to affect management resources available was size. The research therefore examined the use of consultants as potential substitutes for internal resources.

11.7 External Resources

Merchant banks were the most commonly used type of consultants, with 31 companies using them. Many companies though expressed the view that this was only to 'sell' a deal to the city. A large number of companies used environmental consultants (22), and property consultants Fewer used strategy consultants (9). The number of consultants used was found not to influence success. The use of merchant banks, however, was found to be negatively correlated with 1 success measure There was only limited evidence to support this for the other 2 success measures

11.8 Experience

Experience of acquisitions, by both the company and the individual, was found not to affect success levels. In contrast individual experience of the industry and company, measured in terms of years spent at the company and in working in the industry was significantly related to success, thus supporting Day and Lord's(1991)findings, but contrary to Yates, McDaniel and Brown (1991).

The researcher explored a number of possible explanations for this and found 2 other significant relationships with experience. A positive relationship with the number of people asked for information, as Yates, McDaniel and Brown (1991) predicted was found but, on the other hand, there was a negative relationship with the percentage of time spent on financial analysis. The number of people asked for information was shown also to be related to size.[2]

This contradiction of Yates, McDaniel and Brown (1991) could be a product of the acquisition situation. It could be argued that as acquisitions decisions are often constrained by limited information, unlike most situations, where extra information results in information overload, the extra information still has marginal value.

Secondly, acquisitions are often conducted under time pressure. There is an extensive body of material (Calderwood, Klien and Crandall, 1990, Chase and Simon 1973, Day and Lord, 1991) which suggests that under time pressure more experienced decision makers performance does not deteriorate as rapidly as inexperienced decision makers. It has been proposed that this is because experienced decision makers use rules of thumb and recognitional techniques (Klien 1993, Abelson, 1976) which give approximate answers

This would imply that much of the laboratory based material may be irrelevant to examining naturalistic situations because the ability to collect additional information

through contacts and real time pressure cannot be modelled using 'business' type situations. These conclusions have so far summarised the findings of this research. The researcher will now utilise the frameworks presented in chapter 1 to draw together the findings of this research. This is not intended to refute these models but conflicts between the models and data collected will be highlighted.

11.9 Comparison Between Process Models and Research Findings

Research on the acquisition process has been scarce. Three pieces of research of note have been conducted over the last 30 years, Kitching (1972, 1973, 1974), Birley (1974, 1976) and Haspeslagh and Jemison (1991).

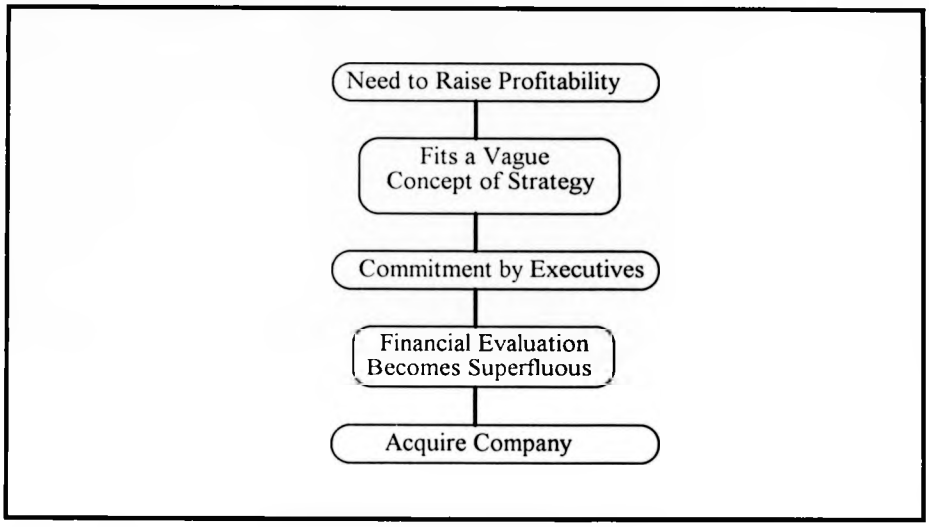
In chapter 1 the author either generated or extracted one model of the acquisition process from each of these authors works, figures 1.7, 1.6 and 1.4 respectively. These models did not specify exactly what companies should do or did but were general frameworks. The following section will compare these models and the data presented in chapters 7, 8, 9 and 10 and will therefore provide conclusions at a general level. The reader should note that this researcher did not set out specifically to test these models (figures 1.7, 1 6 and 1.4). He is using them to bring together points which have been discussed in isolation in the empirical chapters. Data therefore on certain specific aspects of the models may not have been collected in a testable form.

11.10 Birley's Model

The key features of the model based on Birley (1974, 1976) are that: the motivation for an acquisition is current profitability, and a proposal to acquire is subjected to 2 screening criteria before a decision to buy is made. These criteria are a vague concept

of strategy and the gaining of executive commitment, the latter making financial analysis superfluous. These points can be seen in the model below. (figure 1.6.)

Figure 1.6 Model of Acquisition Process based on Birley's Work



All except 1 case collected in this research does not appear to fit this model. This case was deemed to be unsuccessful.[3] It is, however, unclear in this case whether the initial stimulation was to raise profitability, or a vague concept of strategy. It is clear, however, that the driving factor behind this acquisition was executive commitment - the financial analysis was conducted but ignored. Other companies may have followed a similar approach, but respondents were unaware that the analysis work they were conducting was being ignored or they were saying what they thought the researcher wanted to hear. This point will be returned to in the section on methodology and research limitations.

There are 3 areas where the majority of the cases collected seem to conflict with this model:

1) Most companies claimed to have conducted detailed financial evaluations. Forty-one companies stated they used discounted cash flow analysis, and 24 companies claimed discounted cash-flow analysis was 1 of their 3 key criteria. Only the 1 company claimed not to have used any of the five conventional financial criteria.[4] It is thus difficult to see the financial analysis as superfluous. Companies may have ignored the results, in a few cases, but those acquisitions which were put forward to the head office by operating units were subject, in particular, to detailed financial controls.

It is possible that the variety of decision criteria used by most companies - only 18.7 percent used one or less finance criteria and 56 percent 3 or more - is deliberate to allow vagueness. That is, the process as espoused by the finance literature has had additional variables such as payback and accounting rates of returns added to the decision process to allow board directors to rationalise decisions. Accordingly decisions are made on a vague notion of profit and executive commitment which is then rationalised with whichever criteria supports it.

Fixed hurdle rates may also be used to achieve this. Thirty-one companies claimed to have used fixed hurdle rates in the specific cases discussed. Although most of these had some degree of flexibility, one operating unit felt it was subject to implicit hurdle rates even if they were not explicit.[5]

This use of fixed hurdle rates implies that companies had a clear idea of what their targets were and had quantified this. These hurdle rates however were in many cases old and had not been changed recently to take account of lower inflation and interest rates or changes in the industry in which the organisation operated in. This is in line with Wardlaw's research(1994:254) which found that 'many firms continued to seek rates of return which partly reflected past higher and more variable inflation and interest rates' This leaves the possibility that companies only have a vague notion of profitability. All proposals which pass the very high historic hurdle rates proceed.

Which leaves all 'marginal' projects subject to vagueness of criteria and executive commitment.

2) All companies claimed that strategic criteria limited the industries within which they would acquire. Some companies claimed to have criteria which limited the countries in which they acquired. There was, however, a degree of variation in how tightly these strategic criteria were defined. A company's strategy may in some cases be stretched by brokers to fit what they have to offer. Some managers, however, felt that the strategy they were subject to was narrower than Board statements by their chairman would imply[6]. The explicit strategy perhaps being broader than the implicit one underlying it. The explicit strategy is, though, the one which external brokers see and therefore acquisitions which are the result of external ideas may be subject to more relaxed strategic limitations than internally generated ones. Internal managers also may have little time to search for acquisitions, thus they may only be able to consider companies they come into contact with through normal trading. The situation therefore, for acquisitions resulting from internal ideas from non-board members, seems to have clearly changed from the situation Birley (1974) found. External ideas may be subject to less rigorous analysis if the approach is direct to the chairman and his commitment gained.

3) Companies claimed to spend an average of 130 man weeks work on analysis before making a decision to acquire; of this, 31 per cent, on average, was devoted to financial work.

This evidence suggests that Birley's model (1976) is not typical of companies in the sample covered in this research. It did, however, reflect the behaviour in one acquisition which was seen as a failure.[7] This resulted from excessive commitment to the project by the chairman prior to detailed work having been conducted. The main area where Birley's model breaks down as reflecting the data is that all companies

Which leaves all 'marginal' projects subject to vagueness of criteria and executive commitment.

2) All companies claimed that strategic criteria limited the industries within which they would acquire. Some companies claimed to have criteria which limited the countries in which they acquired. There was, however, a degree of variation in how tightly these strategic criteria were defined. A company's strategy may in some cases be stretched by brokers to fit what they have to offer. Some managers, however, felt that the strategy they were subject to was narrower than Board statements by their chairman would imply[6]. The explicit strategy perhaps being broader than the implicit one underlying it. The explicit strategy is, though, the one which external brokers see and therefore acquisitions which are the result of external ideas may be subject to more relaxed strategic limitations than internally generated ones. Internal managers also may have little time to search for acquisitions, thus they may only be able to consider companies they come into contact with through normal trading. The situation therefore, for acquisitions resulting from internal ideas from non-board members, seems to have clearly changed from the situation Birley (1974) found. External ideas may be subject to less rigorous analysis if the approach is direct to the chairman and his commitment gained.

3) Companies claimed to spend an average of 130 man weeks work on analysis before making a decision to acquire, of this, 31 per cent, on average, was devoted to financial work.

This evidence suggests that Birley's model (1976) is not typical of companies in the sample covered in this research. It did, however, reflect the behaviour in one acquisition which was seen as a failure.[7] This resulted from excessive commitment to the project by the chairman prior to detailed work having been conducted. The main area where Birley's model breaks down as reflecting the data is that all companies

conducted detailed financial analysis. It is however possible that the flexibility indicated in fixed hurdle rates, and their historic nature in some companies indicates that these are used to reject all but exceptional projects which do not have senior executive commitment.

This review has suggested that the model based on Birley (1974, 1976) may not reflect the general reality of the acquisitions process in large companies in the early 1990's. However, it does model one case which ended in failure. It is possible that, the model based on Birley (1974,1976) represents either the method by which companies which declined to be interviewed used, considering that their process was 'unprofessional' and not wishing to let it be seen, or which smaller companies operate. This will be discussed in the limitations section further.

11.11 Kitching's Model

In contrast to Birley's (1974, 1976) model, Kitching's (1972, 1973, 1974) model views the process as very structured with a series of filters, as shown in figure 1.7.

Kitching's (1973) model is difficult to refute as: A) All companies used some screening questions and reviewed their acquisitions against corporate strategy, B) all companies had a method for setting maximum price, whether it was a multiple of current profits, DCF or the cost of achieving the same by organic means.

A) Filters Used.

There was evidence of a wide degree in variation in the use of industry filters from:

> 'The first thing is to establish the nature of the business. Is this the sort of thing that the group has the management to control? In our case that does include a very broad range of basic industries.'

to:

> 'We are not a business that is interested in diversification ..... We consequently typically acquire businesses similar to our own.' 'There would be 2 [criteria] 1) is it a competitor and is that enabling us to remove a competitor and 2) are the sites in locations which would complement our existing portfolio of sites. If they are all adjacent to our existing sites the target would be less attractive.'

That is, in some cases companies may be imposing very limited filtering by industry. There was however greater variation in the other commonly used filter - geography. Twenty companies imposed geographic filters and 25 stated they did not or considered themselves to be a global company. The limits to these filters, however, varied:

> 'Acquisitions will be considered in any geographic area; however there is a strong preference for the UK, the USA and Northern Europe in that order.'

and another company

> 'the chairman has got his list of six countries we are looking at, at the moment, and those are the ones which I keep talking about, China, Vietnam, Mexico, the Far East and so on.'

No evidence though, was found for the series of filters proposed by Kitching (1973) (review against corporate strategy, review against objectives, and coarse screen questions). Most companies said they used 2 filters, industry and geographic area. A few suggested others, including size and technology but these were relatively rare.

The use of only 2 filters prior to detailed financial analysis could be because only 1 company was conglomerate in nature and many of the ideas were internally generated. Many internal acquisition ideas which do not fit the objectives and general screening criteria may never progress to the stage where they are enunciated, let alone written down. Secondly, ideas which are generated internally are more likely to be developed from the area bounded by the organisations competitive contacts. It is impossible to establish this with the research method used. This is clearly a limitation. However, to develop detailed transcriptions of how people thought they processed initial ideas would require very high levels of access to companies and individuals close to the event.

Companies may therefore not require the early filters proposed by Kitching (1973) because the area which the organisation is drawing ideas from includes only companies which satisfy the filtering requirements.

External ideas may be subjected to a more detailed filter process but interviewees did not enunciate these. Company Alpha, in illustration 7.1, used only the limits in their strategic plan before progressing on to a financial analysis.

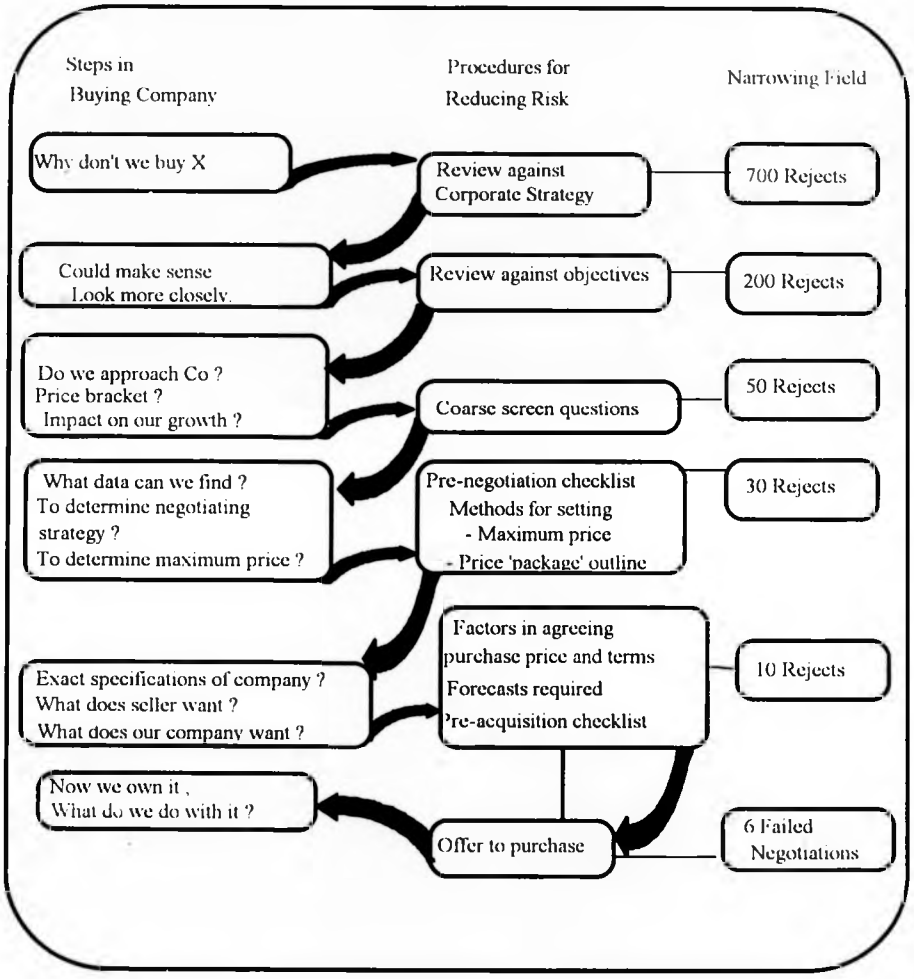
B) Price Setting Method.

All companies described in detail how they set a maximum price. Forty-one companies used discounted cash flow measures, however, 10 said they did not use discounted cash flow measures. Nine of these companies said that they used earnings per share, specifically the maximum price being the point at which the acquisition is earnings neutral. The other company used the cost of achieving the same results by purchasing sites and other physical assets - 'We would try to appreciate what those sites would cost'.

Kitching's (1972, 1973, 1974) model does not seem to mirror behaviour in detail at any of the companies surveyed. Companies did, however, use 2 filters on the ideas before analysing them in detail. It might, however, have reflected the prevailing 'long range planning' paradigm of the late sixties and early seventies.

There is, however, insufficient evidence to refute this model.

Figure 1.7 **Developing Systematic Procedures for Risk Reduction in Acquisitions**



Kitching, 1973: 154, Chart VIII-J

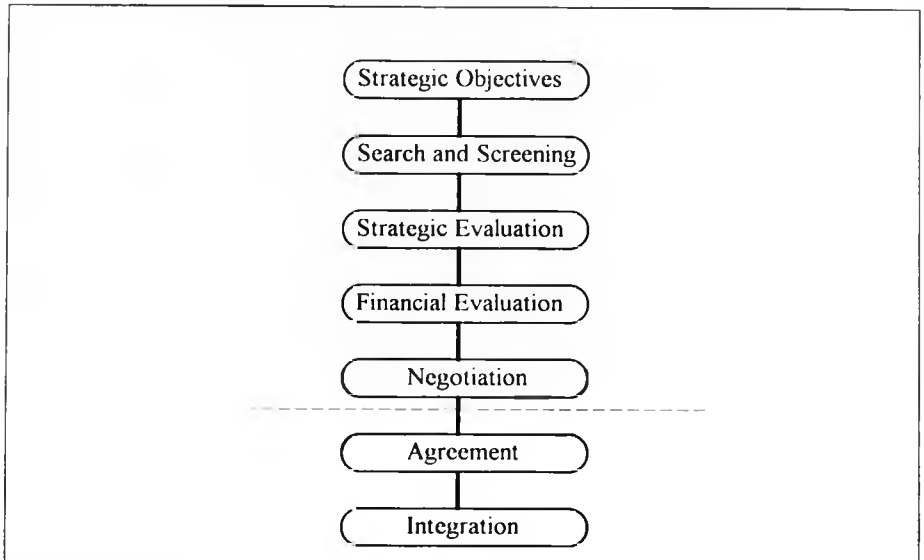
11.12 Haspeslagh and Jemison's Model

Haspeslagh and Jemison's (1991) model of what they perceive as being current practice should reflect reality, as that was its aim, and it is a recent model. It, like Kitching's (1973) model, is difficult to refute particularly as only 3 stages are relevant to this research, search and screening, strategic evaluation, and financial evaluation.

Clear evidence exists for the first phase, search and screening. All companies looked for acquisitions whether actively searching or just monitoring their competitive environment. Clear evidence exists that companies conducted financial evaluations. However, this researcher did not find evidence to suggest that companies conducted a separate strategic evaluation.

This may be because this researcher used a 2 step model to structure this thesis. The data could have been subconsciously pushed into this even if it did not fit. The model, however, was developed after the interview schedule and questions. It, therefore, should not have affected the data collected. This researcher can only state that he did not deliberately attempt to bias the analysis.

Figure 1.4 **Haspeslagh and Jemison's (1991) Conventional View of Acquisitions**



Haspeslagh and Jemison, 1991: 13

This section has so far compared the data collected by the researcher to a series of models (Birley, 1974, 176, Kitching, 1972, 1973, 1974, Haspeslagh and Jemison, 1991) It has concluded that the data does not support the models presented in chapter 1 although one case fits Birley's model and it is impossible to refute the others.

The researcher will now review the method and examine the limitations this places on this research.

11.13 Methodology and Limitations

This section will be divided into two basic parts. The first will examine the general tradition into which this research falls, second it will examine the more specific facets of the method used and the limits this places on the research findings.

Conceptual Position

Inherent in this thesis is the assumption that the decision episode is a relevant unit of analysis. This approach has been challenged most notably by Pettigrew (1990A, 1990B, 1990C) and Mintzberg and Waters(1990).

Mintzberg and Waters(1990 1) suggest that it makes 'more sense for us to study streams of actions and then go back and investigate the role of decisions in determining these actions.' This position is based on the view that decisions do not necessarily lead to actions and for an action to occur there does not have to have been a decision.

Mintzberg and Waters (1990) arguments suggesting that research should concentrate on actions and trace back events through various decisions, quasi-decisions and streams of actions, were to some degree followed in this research except that the central action was the final decision rather than the physical process of taking control. The final decision in an acquisition was only a rubber stamping exercise in the one case where the chairman had committed himself to the acquisition. In other cases funds may have been approved, and logically incremental decisions may have created an escalating commitment, but someone had to approve the bid, or agree the price in negotiations. The importance of the decision was partly due to the small number of people involved which limited search activity but by involving fewer people there is less momentum and political power groups behind any given route. In a bidding war there may have been temptation to raise bids but this is still a decision. The specific aim of the research was to examine one type of event- an acquisition where it is

unlikely the specific action will occur without a decision, or that a decision to acquire which does not result in an acquisition will require a second decision to stop the process or it is inherent in the first decision - a limit on price. The decision to acquire is unlikely to be ignored.

The second major challenge to the decision event view has come from Pettigrew (1990A, 1990B, 1990C) he proposes that research should focus on a stream of changes to allow the decision to be placed in the context of a long stream of actions. An approach which would have allowed an acquisition decision to be placed in longitudinal context collected over real time would have precluded collecting data from more than a few sites. The researcher chose to collect data from a large number of sites to allow statistical work to be conducted. An approach based on Pettigrew's (1990A, 1990B, 1990C) methodological view would, however, provide valid insights into the process, particularly whether specific events occurred as decision makers have described them.

This conceptual position raises the question of the researcher imposing the decision analysis and information processing framework on the data. It to some degree is implicit even in the open ended questions. It is therefore difficult to claim that the analysis was not influenced by this. No evidence was found of a fundamentally different approach being taken by the companies. This, however, is the researcher's interpretation of the data. This leaves a number of issues surrounding the specific methodology used and the limitations it places on the research.

Methodological Position

This research used an interview approach to collect data. 52 senior executives at 48 companies were interviewed during 1994 and 1995 using a standardised interview schedule. Success was measured using a subjective scale based on Datta and Grant

(1990). Other data was collected from the Fame and One-source databases, Extel cards and corporate reports.

This method contrasts with that used in the capital markets literature in that it collects data from within the organisations which may not have been publicly available (c.f. Franks, Harris and Titman, 1991). The cost of this is that it restricts the use of market based success measures and limits the sample size.

The structured interview method used, however, allowed a far greater number of cases to be collected than unstructured methods.(c.f. Haspeslagh and Jemison, 1991) The structured nature of the interview schedule and the structured subjective success measure (c.f. Kitching, 1972, 1973, 1974) allowed both detailed hypotheses to be explored, without removing the possibility of collecting qualitative data, and data which did not fit with the hypotheses to be developed.

The nature of the data collected did restrict the type of statistical tests which could be conducted. This researcher, however, thought that developing scales on many variables where either the interviewees recollection of events was not very detailed, or behaviour was inconsistent, or maybe, open to various interpretations, would have produced spurious results, although some might have been interesting. The method used represented a balance between the external and questionnaire approaches. The latter would have yielded a greater sample size but with less depth of data, while a longitudinal or unstructured interviewing or multiple interview approach would have yielded greater depth on fewer cases.

The researcher will now highlight a number of factors which may limit the effectiveness of the data collection and analysis methods used. How these could potentially affect the findings of this research will then be discussed.

Limitations of the research method used include:

1) The sensitivity of the subject matter made triangulation through the collection of documents impossible. This researcher therefore had to accept what interviewees said at face value. Multiple questions covering the same topic area were used to check consistency and for unusual features of the specific case discussed.

2) Reliance on interviews as a data collection method leaves the possibility that the researcher's expectations and conceptual framework may influence the interviewing approach.

3) Highly detailed descriptions of the process were not possible using this method. This limited the analysis of the search phase.

4) Memory - respondents have limited memories and long gaps between the acquisition and the interview may result in loss of data. Events may become viewed through 'rose tinted spectacles', and certain less palateable events forgotten.

5) Reliance on one interview may result in missing data. That is if respondents are not asked specific questions they may not volunteer information. Secondly, respondents may have answered questions with the objective of minimising interview time and therefore may not have volunteered relevant information.

6) Interviewees may have given answers they believed the interviewer wanted to hear.

7) The use of only 1 interviewee per company limits the data to reflecting what the interviewee knew of the acquisition.

8) Biases in the sample selection in terms of industry and size were examined in chapter 6. There is, however, a problem that the companies which were using what they saw as ' unprofessional' methods may have declined to be interviewed. That is, the sample may have included a disproportionately large number of companies using discounted cash flow analysis.

9) The small size of the sample reduced the power of some statistical tests. It also prevented wider sensitivity analysis for chi-squared tests for some variables.

10) The success measure used was subjective.

These limitations affect how the research should be interpreted. The reliance on one post event interview per company makes it impossible to determine whether interviewees are giving inaccurate information concerning the acquisition, either deliberately or as a result of having to recall events that happened up to 4 or 5 years ago. The researcher is unsure whether he would have been able to obtain multiple interviews from companies on one acquisition and even if there was more than one respondent at each company who could answer many of the questions put to the interviewees. The data is, therefore, in most cases, the view of the person most closely involved with the acquisition. This is a double edged sword. It implies that the respondent should be able to give the most accurate reflection of events available. It equally implies that the respondent is the person most associated with the acquisition and may wish to show it in a favourable light.

The industry and size biases in the sample could have been corrected if they had been spotted earlier. The use of the 2-digit code for the companies is clearly problematic. They fail to capture the diversity of the industries individual companies operated in. However, to use more than one code per company would have made any analysis difficult particularly given the small sample size. It is difficult to propose a consistent test for a bias to 'more professional' companies given only external information is available on the companies which declined to be interviewed.

This researcher concluded that the method used was the most suitable to the problem given the state of the literature and the sensitivity of the issue. The one area where the method used could be improved was the sample selection, where the researcher could have stratified the sample to reflect the sample frame as a whole. The sample, however, would then not have been random.

The method used, however, clearly has other limitations as set out above. It is difficult to see how these could be corrected within the resources available for this research. The author will now present what he sees as fruitful avenues for future research.

11.14 Directions for Future Research.

This research has utilised the interview method to produce a combination of both qualitative and quantitative data. This has allowed some hypotheses to be accepted, some rejected and others explored inconclusively. It, however, has left a number of unanswered questions, and in those areas where significant results were found, there is a need to further test these hypotheses.

The conclusions concerning experience and the source of an acquisition idea would benefit from a large-scale questionnaire approach to test them further. This could use both the subjective scale used in this research and a capital market measure on those cases where the company declares the date of the acquisition and sufficiently robust data can be established. This would allow the development of theory along the lines that the capital markets literature has developed for external variables.

The lack of superior performance by companies using discounted cash-flow analysis would also benefit from the confirmation that a larger scale approach would allow. The use of a variety of success measures would also add to the value of this approach.

The analysis of the process of conducting and using the results of DCF techniques would benefit from being subjected to in-depth study utilising ethnographic technique, and longitudinal methods with post event interviews used to establish how participants viewed the process. An opportunity to conduct these types of research is unlikely

outside a company which is already allowing itself to be studied on a longitudinal basis.

A matched pair observation approach could allow the effects of managerial experience to be examined. This would require access to 2 managers conducting acquisitions, 1 experienced the other not, in different parts of the same organisation or 2 similar organisations. This would allow detailed comparison of the process. This researcher suspects it is from easier access to information, both that stored in the memory and available through contacts, which allows the rapid development of initial models and assumptions. With time being limited this allows attention to be focused earlier on specific issues which seem important.

This researcher considers that participant observation is unlikely to give sufficiently unbiased data to allow issues such as whether DCF was ignored, whether fixed hurdle rates were really applied and how consultants influenced the process to be explored.

How experienced managers make decisions could also be explored in an experimental setting. This researcher, however, considers that it would be difficult to obtain experienced managers to participate. One potential way round this is to use MBA students who are currently practising managers as the inexperienced managers, and to use recently retired managers as the experienced managers. The complication of differing education level though would have to be tackled. Tasks set should closely mirror real situations, possibly using prospectuses for recently floated companies. Limiting where subjects can collect information and having a correct answer though would reduce the relevance of this method to developing useful insights into the difference between how experienced and less experienced managers operate and, in particular, develop cash-flow forecasts.

In summary, this researcher considers that a variety of methods can aid the development of knowledge about the processes involved in acquisitions

11.14 Main Conclusions

The main findings of this research are that :

- Acquisitions resulting from ideas from outside the company are less successful than internal ideas.
- Companies which limit the geographic area covered in looking for an acquisition are more successful than those that did not.
- No relationship between the levels of information collection and success was found.
- Birley's (1974,1976), Kitching's (1972,1973) and Haspeslagh and Jemison's (1991) models do not reflect the acquisition process found by this research in most cases.
- The use of DCF does not increase success levels.
- Individual experience of the company and industry are positively correlated with success.

Footnotes

[1] This measure asked the respondent to state their 3 key criteria for the specific acquisition discussed, rank their importance on a scale from 1 to 10 and rate how successful the acquisition had been on those criteria, on a scale from 1 to 5

[2]Sales for last two set of accounts.

[3] Details of this case is given in illustration 7.2

[4] NPV, IRR, EPS, ARR and Payback.

[5] 'Officially no, is perhaps what I should say to that. But I think there are perceived hurdle rates that we as a subsidiary feel we are working against, and we tend to filter out projects that don't meet those rates.'

[6]See section 7.1.2 Company L.

[7] Details of this case is given in illustration 7.2.

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APPENDIX A **INTERVIEW SCHEDULE**

Thank you for allowing me to interview you.
I would first like to briefly explain my area of research and the structure I would like to follow in this interview.
The main aim of this research is to examine how companies acquire and whether the management process effects success. That is the management procedures and processes before a decision is made on whether to acquire or dispose of a business. To help me carry this out I would first like to ask you a series of general questions about how Company Z carries out acquisitions and disposals. This will be followed at the end by a series of questions which I would like you to answer referring to specific acquisitions. You may chose to not to name these.

General Data
Information Collection

I would first like to ask you about information collection prior to considering acquiring another company.

1) Does Company Z monitor product market variables for markets it is present in (For example market share, market size) ?

A) Yes ☐

B) No ☐

2) Are these product market variables monitored ?

A) Continuously ? ☐

B) As Events Demand ? ☐

C) Regularly But Not Continuously ? ☐

3) How is this product market data processed ?

Is it collected together at all ?

Is it filtered and summarized ?

IF NO GO TO QUESTION 5

4) At what level is this data collected together ? [For example Unit, Region, Division]

5) Is this market data ?

A) Available To You On Request ? ☐

B) Automatically Sent To You ? ☐

C) Not Generally Available ? ☐

D) Non Of These ? ☐

6) Does Company Z monitor market variables for its current product range outside the geographic markets it is present in ?

A) Yes ☐

B) No ☐

7) For geographic markets Company Z is present in do you monitor product markets that you currently do not compete in ?

A)Yes ☐

B) No ☐

If no to both 6 and 7 move to 11

8) Is this monitoring of markets you are not currently present in done ?

A) Continuously ? ☐

B) As Events Demand ? ☐

C) Regularly But Not Continuously ? ☐

9) Is this information on markets you are currently not present in collected together at all?

A) Yes ☐

B) No ☐

10) Is this information on markets you are not currently present in ?

A) Available To You On Request ? ☐

B) Automatically Sent To You ? ☐

C) Not Generally Available ? ☐

D) None Of These ? ☐

11) Does Company Z have its own corporate information library ?

A) Yes ☐

B) No ☐

Prompt - *Collecting company accounts and general financial data and general data that may be of use*

12) Has Company Z arranged access to any external corporate information libraries ?

A) Yes ☐

B) No ☐

13) Has Company Z commissioned external consultants to carry out information searches for acquisitions ?

A) Yes ☐

B) No ☐

Management Resources

I would now like to ask you a few questions about the provision and location of management resources available for the review of acquisitions or divestments and established procedures.

14) If Company Z was reviewing a potential acquisition where within the company structure would this analysis be conducted ?

Prompts - in business units, division , Headquarters

- does this vary with size and over the process

15) Does Company Z employ anyone whose primary role is to review acquisitions ?

A) Yes ☐

B) No ☐

If yes go to 16

B) Does Company Z employ anyone for whom it is an important part of their job but not their main role ?

A) Yes ☐

B) No ☐

If no to both 15 and 15B go to 18

16) At what level within the organisation is the most senior person whose main responsibility is acquisitions ?

prompt - *and below him or her* .[Exploring divisional structure]

17) How many staff are currently mainly working on acquisitions within Company Z Europe ?

B) Excluding legal staff

C) Within the entire company ?

18) Does Company Z ever use external consultants including merchant banks to review proposed acquisitions ?

A) Yes ☐

B) No ☐

If no go to 21

19) What type of consultants have you used ?

Prompt- For example Merchant bank, Accounting firms, strategic consultants, specialists, etc

_____

_____

_____

_____

20) Where an external consultant has been used have they ever -

A) Acted as the sole analysts ?

A) Yes ☐

B) No ☐

B) Acted in consultation with other external consultants ?

A) Yes ☐

B) No ☐

C) Has an external consultant ever been used in parallel with another external consultant ?

A) Yes ☐

B) No ☐

D) Has an external consultant ever been used in parallel to an internal review ?

A) Yes ☐

B) No ☐

E) Has an external consultant ever been used as part of an internal review ?

A) Yes ☐

B) No ☐

f) Has an external consultant ever been used in any other ways ?

A) Yes ☐

B) No ☐

If no to f go to 21

h) Could you explain how they were used in these cases ?

21) For those acquisitions examined internally does Company Z examine all acquisitions ?

A) Completely individually using no established procedures . ☐

B) Using some standardised techniques . ☐

C) In a totally routine manner. ☐

D) In another way not adequately covered by the previous options. ☐

if B)

How much of the process would be standardised in terms of management time ?

If D Could you explain this *?*

22) What criteria would be used to review an acquisition ?

23) Are these criteria standard or do they vary between acquisitions ?

if they do not vary go to 25

24) Would these criteria be established...

A) Before a review is started ☐

B) Or as the analysis takes place? ☐

25) Is the way these criteria are applied and measured

A) Standardised For All Acquisitions. ☐

B) Varies From Case To Case. ☐

C) Standardised But Exceptions Are Made. ☐

D) Usually Applied In The Same Way. ☐

26) Does Company Z have fixed hurdle rates for any of these criteria ?

A) Yes ☐

B) No ☐

If NO go to 28

27) Which criteria are subject to fixed hurdle rates ?

28) What percentage of the time available to review an acquisition would be spent on

A) Routine Financial Considerations ☐
Prompt - Approximately

B) Non-Routine Considerations ☐

C) Information Collection ☐

Prompt - These may not add up to 100

29) Does Company Z currently have an acquisition strategy ?

A) Yes ☐

B) No ☐

Prompt - *in terms of what sectors and geographic regions you are interested in carrying out acquisitions*

30 **A)** Could you describe this strategy in terms that are not confidential ?

B) When does this acquisition strategy date from ?

31) Could you please fill in the following question -

A) Could you rate the performance of XXXx's acquisition programme over the last three years for the following variables ?

(1 being very poor performance)

Return on Investment	1	2	3	4	5	Don't know	
Effect on Earnings per share	1	2	3	4	5	Negligible	Don't Know
Effect on group Share Price	1	2	3	4	5	Negligible	Don't Know
Cash Flow	1	2	3	4	5	Don't Know	
Sales Growth	1	2	3	4	5	Don't Know	

B)Could you assign a number out of 10 for each factor based on how important you think each is in determining the success of an acquisition programme ?

Return on Investment	1	2	3	4	5	6	7	8	9	10
Effect on Earnings per Share	1	2	3	4	5	6	7	8	9	10
Effect on group Share Price	1	2	3	4	5	6	7	8	9	10
Cash Flow	1	2	3	4	5	6	7	8	9	10
Sales Growth	1	2	3	4	5	6	7	8	9	10

Case

The aim of the following section is to develop descriptions of the processes before negotiations for a specific acquisition.

To achieve this could you please answer the following questions by referring to a specific acquisition rather than what is normal

If you feel able to name the acquisition could you do so at the end so you can be sure you are happy with this

32) What were the sales of this company prior to you considering it for acquisition ?

For Company Z

Less than 140 Million Dollars	
140 Million to 350 million Dollars	
350 Million to 700 Million Dollars	
Greater than 700 Million Dollars	

Prompt - this is not aimed at isolating who the acquisition was but various authors have claimed that relative size is an important variable in determining acquisition success.

33) How successful would you describe the process of reviewing this company as an acquisition target?

34) Was this suggestion associated with any particular group ?

35) Where did the stimulus to examine this company come from ?

36) Were any external advisers involved in the proposal of the target company ?

37) Did the proposal concerning the target company emerge from the acquisition strategy ?
[Had this target been considered before]

38)Who [What function] received this suggestion ?

39) Could you describe any elements of the process which led to this company being considered as an acquisition candidate which you feel have not been covered ?

40) Were you involved in the negotiation process ?

41) Was the review of this acquisition split up between various people ?

YES ☐

NO ☐

[If no person Skip to question 43]

42) Was anyone in overall control of the project for the entire period ?

YES ☐

NO ☐

43) How many different separate groups were involved during the acquisition ?
(Prompt include lawyers and those who proposed the acquisition originally if they worked independently)

44) Who evaluated this proposed acquisition candidate ?

[If not person being interviewed - ask is it possible to talk to this person and Skip to question 48]

The following two questions are concerned with your experience of acquisitions the company and the sector. They are not aimed at collecting personnel data but to examine if experience of industry , company or acquisitions is important in examining acquisitions.

45) How many acquisitions reviews had you done prior to this acquisition ?

(Approximately)

B) Does this include acquisitions which were not completed

46) How long had you been with the company at this point ?

47) How long had you (the manager in charge of the project) been employed in the food industry at this point ?

This following section is concerned with information collection.

48) In the process of examining this company as an acquisition target how many people were consulted for information?

49) What information sources were used in the process of examining this company as an acquisition target.

prompts - internal data

- News papers
- What about information services such as Textline, fame
- Internal library (if relevant)

50) So approximately how many different sources in total ?

51) Could you describe any elements of the data collection process for this acquisition which you feel are important that have not been covered by the previous questions ?

52) What criteria were used to examine this acquisition ?

53) Which of these criteria were the three most important ?

Could you please fill in the following questions -

54) Could you assign weights out of 10 to each criteria based on how important you think they were ?

_____ 1 2 3 4 5 6 7 8 9 10

_____ 1 2 3 4 5 6 7 8 9 10

_____ 1 2 3 4 5 6 7 8 9 10

55) Could you rate on a scale from 1 to 5 how the acquisition has performed on these criteria ? (1 being very poor)

A) 1 2 3 4 5

B) 1 2 3 4 5

C) 1 2 3 4 5

56) How was this acquisition evaluated against these criteria ?

Prompts - Were these based on projections ?

- How were these projections developed ?

- Were the projections changed as more information became available ?

- So was this an iterative process

- Did you include the value of plant and equipment in these valuations ?

- If yes was the plant visited ?

- Was market growth included in the process of analysing this acquisition ?

- How was this achieved ?

- Was advertising considered.

57) Did this process involve any internal political factors ?

If No go to 59

58) How did these effect the process ?

59) Could you describe any element of the process of examining this acquisition which has not been covered here ?

60) How long did this process take ?

(Prompt so the total man weeks taken were ?)
B) Approximately how many man weeks were involved ?

61) How long was the report that resulted from this analysis ?

Prompts - Approximately
- 10 ?
- 25 ?
- 50 ?
- more ?

62) How many alternatives were considered in the final report ?

prompt - buy not buy
- buy 50% ,
- Joint venture,
- buy another company,
- build your own plant ?

Where these considered at the same time as the acquisition ?

63) How many tables or graphs with quantitative data were included in the report that was presented ?

64) Could you please fill in the following question -

A) Could you rate the performance of the acquisition for the following variables ? (1 being very poor performance)

Return on Investment	1	2	3	4	5	Don't know	
Effect on Earnings per share	1	2	3	4	5	Negligible	Don't Know
Effect on group Share Price	1	2	3	4	5	Negligible	Don't Know
Cash Flow	1	2	3	4	5	Don't Know	
Sales Growth	1	2	3	4	5	Don't Know	

B)Could you assign a number out of 10 for each factor based on how important you think each is in determining the success of the acquisition ?

Return on Investment	1	2	3	4	5	6	7	8	9	10
Effect on Earnings per Share	1	2	3	4	5	6	7	8	9	10
Effect on group Share Price	1	2	3	4	5	6	7	8	9	10
Cash Flow	1	2	3	4	5	6	7	8	9	10
Sales Growth	1	2	3	4	5	6	7	8	9	10

Thank You

Thank You

Have you any questions you would like to ask ?

Thank you for your co-operation and time.

APPENDIX B TABLES COMPARING SAMPLE FRAME, SAMPLE AND THOSE COMPANIES INTERVIEWED ON SALES AND PROFITS

Table B 1 Comparison of Sales between Those Asked for An Interview and Those Not for Last Set for Accounts

Test of Equality of Variance

Variable	Number of Cases	Mean in Million Pounds	Standard Deviation	Difference between Means In Million Pounds
Asked	119	2887.680	6960.015	
Not Asked	152	2169.808	3137.488	717.872

Levene's Test for Equality of Variances: F= 2.217 P= .138

T-Test for Equality Of Means

Variances	t-value	Degrees of Freedom	2-Tail Significance
Equal	1.13	269	.258
Unequal	1.05	155.46	.259

Table B 2 Comparison of Sales between Those Asked for An Interview and Those Not for Penultimate Set of Accounts

Test of Equality of Variance

Variable	Number of Cases	Mean in Million Pounds	Standard Deviation in Million Pounds	Difference between Means In Million Pounds
Asked for Interview	119	2720.430	6875.967	
Not asked	152	2064.778	3098.948	655.652

Levene's Test for Equality of Variances: F= 1.871 P= .173

T-test for Equality of Means

Variances	t-value	Degrees of Freedom	2-Tail Significance
Equal	1.05	269	.296
Unequal	.97	155.44	.335

Table B.3 Comparison of Sales between Those Asked for An Interview and Those Not for Anti-Penultimate Set of Accounts

Test of Equality of Variance

Variable	Number of Cases	Mean in Million Pounds	Standard Deviation in Million Pounds	Difference between Means In Million Pounds
Asked for Interview	118	2496.397	6127.510	
Not asked	151	1942.127	2919.824	554.269

Levene's Test for Equality of Variances: F= 1.653 P= .200

T-test for Equality of Means

Variances	t-value	Degrees of Freedom	2-Tail Significance
Equal	.98	267	.329
Unequal	.91	158.32	.367

Table B.4 Comparison of Pre-Tax Profits between Those Asked for An Interview and Those Not for Last Set of Accounts

Test of Equality of Variance

Variable	Number of Cases	Mean in Million Pounds	Standard Deviation in Million Pounds	Difference between Means In Million Pounds
Asked for Interview	119	244.261	705.078	
Not asked	152	174.435	414.598	69.825

Levene's Test for Equality of Variances: F= 1.877 P= .200

T-test for Equality of Means

Variances	t-value	Degrees of Freedom	2-Tail Significance
Equal	1.02	269	.310
Unequal	.96	180.21	.339

Table B 5 Comparison of Pre-Tax Profits between Those Asked for An Interview and Those Not for Penultimate Set of Accounts

Test of Equality of Variance

Variable	Number of Cases	Mean in Million Pounds	Standard Deviation in Million Pounds	Difference between Means In Million Pounds
Asked for Interview	119	222.038	650.078	
Not asked	152	145.973	334.041	76.064

Levene's Test for Equality of Variances: F= 3.181 P= .076

T-test for Equality of Means

Variances	t-value	Degrees of Freedom	2-Tail Significance
Equal	1.25	269	.213
Unequal	1.16	166.22	.247

Table B 6 Comparison of Pre-Tax Profits between Those Asked for An Interview and Those Not for Anti-penultimate Set of Accounts

Test of Equality of Variance

Variable	Number of Cases	Mean in Million Pounds	Standard Deviation in Million Pounds	Difference between Means In Million Pounds
Asked for Interview	118	201.079	598.813	
Not asked	152	120.517	350.439	80.562

Levene's Test for Equality of Variances: F= 2.900 P= .090

T-test for Equality of Means

Variances	t-value	Degrees of Freedom	2-Tail Significance
Equal	1.38	268	.168
Unequal	1.30	177.75	.196

Table B 7 Comparison of Sales between Those Asked for An Interview and Those Not for Last Set for Accounts With Largest Company Excluded

Test of Equality of Variance

Variable	Number of Cases	Mean in Million Pounds	Standard Deviation	Difference between Means In Million Pounds
Asked	118	2387 330	4336 995	
Not Asked	152	2169 808	3137 488	217 522

Levene's Test for Equality of Variances F= .052 P= .820

T-Test for Equality Of Means

Variances	t-value	Degrees of Freedom	2-Tail Significance
Equal	.48	268	633
Unequal	.46	205 14	646

Table B 8 Comparison of Sales between Those Asked for An Interview and Those Not for Penultimate Set of Accounts With Largest Company Excluded

Test of Equality of Variance

Variable	Number of Cases	Mean in Million Pounds	Standard Deviation in Million Pounds	Difference between Means In Million Pounds
Asked for Interview	118	2206 620	3999 804	
Not asked	152	2064 778	3098 948	141 842

Levene's Test for Equality of Variances F= .001 P= .976

T-test for Equality of Means

Variances	t-value	Degrees of Freedom	2-Tail Significance
Equal	33	268	743
Unequal	32	215 24	751

Table B.9 Comparison of Sales between Those Asked for An Interview and Those Not for Anti-Penultimate Set of Accounts with Largest Company Excluded

Test of Equality of Variance

Variable	Number of Cases	Mean in Million Pounds	Standard Deviation in Million Pounds	Difference between Means In Million Pounds
Asked for Interview	117	2047.478	3726.211	
Not asked	151	1942.127	2919.824	105.350

Levene's Test for Equality of Variances: F= .005 P= .941

T-test for Equality of Means

Variances	t-value	Degrees of Freedom	2-Tail Significance
Equal	.26	266	.795
Unequal	.25	215	.801

Table B.10 Comparison of Pre-Tax Profits between Those Asked for An Interview and Those Not for Last Set of Accounts With Largest Company Excluded

Test of Equality of Variance

Variable	Number of Cases	Mean in Million Pounds	Standard Deviation in Million Pounds	Difference between Means In Million Pounds
Asked for Interview	118	190.170	387.599	
Not asked	152	174.435	414.598	15.734

Levene's Test for Equality of Variances: F= .000 P= .998

T-test for Equality of Means

Variances	t-value	Degrees of Freedom	2-Tail Significance
Equal	.32	268	.751
Unequal	.32	258.89	.749

Table B 11 Comparison of Pre-Tax Profits between Those Asked for An Interview and Those Not for Penultimate Set of Accounts With Largest Company Excluded

Test of Equality of Variance

Variable	Number of Cases	Mean in Million Pounds	Standard Deviation in Million Pounds	Difference between Means In Million Pounds
Asked for Interview	118	174.877	399.698	
Not asked	152	145.973	334.041	28.903

Levene's Test for Equality of Variances: F= .279 P= .598

T-test for Equality of Means

Variances	t-value	Degrees of Freedom	2-Tail Significance
Equal	.65	267	.518
Unequal	.63	243.84	.528

Table B 12 Comparison of Pre-Tax Profits between Those Asked for An Interview and Those Not for Anti-penultimate Set of Accounts With Largest Company Excluded

Test of Equality of Variance

Variable	Number of Cases	Mean in Million Pounds	Standard Deviation in Million Pounds	Difference between Means In Million Pounds
Asked for Interview	117	157.387	366.701	
Not asked	152	120.517	350.439	36.870

Levene's Test for Equality of Variances: F= .2900 P= .591

T-test for Equality of Means

Variances	t-value	Degrees of Freedom	2-Tail Significance
Equal	.84	267	.403
Unequal	.83	243.804	.405

Table B.13 Comparison of Sales between Those Asked for An Interview and Those Not for Last Set for Accounts With Largest Two Companies Excluded

Test of Equality of Variance

Variable	Number of Cases	Mean in Million Pounds	Standard Deviation	Difference between Means In Million Pounds
Asked	118	2169.589	3650.883	
Not Asked	152	2169.808	3137.488	- 218

Levene's Test for Equality of Variances: F= .454 P= .501

T-Test for Equality Of Means

Variances	t-value	Degrees of Freedom	2-Tail Significance
Equal	.00	267	1.000
Unequal	.00	228.62	1.000

Table B.14 Comparison of Sales between Those Asked for An Interview and Those Not for Penultimate Set of Accounts With Largest Two Companies Excluded

Test of Equality of Variance

Variable	Number of Cases	Mean in Million Pounds	Standard Deviation in Million Pounds	Difference between Means In Million Pounds
Asked for Interview	117	2014.369	3425.991	
Not asked	152	2064.778	3098.948	-50.408

Levene's Test for Equality of Variances: F= .786 P= .382

T-test for Equality of Means

Variances	t-value	Degrees of Freedom	2-Tail Significance
Equal	- 13	267	.900
Unequal	- 12	236.16	.901

Table B 15 Comparison of Sales between Those Asked for An Interview and Those Not for Anti-Penultimate Set of Accounts with Largest Two Companies Excluded

Test of Equality of Variance

Variable	Number of Cases	Mean in Million Pounds	Standard Deviation in Million Pounds	Difference between Means In Million Pounds
Asked for Interview	116	1865.447	3177.243	
Not asked	151	1942.127	2919.824	-76.680

Levene's Test for Equality of Variances: F= .854 P= .356

T-test for Equality of Means

Variances	t-value	Degrees of Freedom	2-Tail Significance
Equal	- 20	265	838
Unequal	- 20	235.35	840

Table B 16 Comparison of Pre-Tax Profits between Those Asked for An Interview and Those Not for Last Set of Accounts With Largest Company Excluded

Test of Equality of Variance

Variable	Number of Cases	Mean in Million Pounds	Standard Deviation in Million Pounds	Difference between Means In Million Pounds
Asked for Interview	117	175.188	353.293	
Not asked	152	174.435	414.598	.753

Levene's Test for Equality of Variances: F= .274 P= .601

T-test for Equality of Means

Variances	t-value	Degrees of Freedom	2-Tail Significance
Equal	02	267	987
Unequal	02	264.21	987

Table B.17 Comparison of Pre-Tax Profits between Those Asked for An Interview and Those Not for Penultimate Set of Accounts With Largest Company Excluded

Test of Equality of Variance

Variable	Number of Cases	Mean in Million Pounds	Standard Deviation in Million Pounds	Difference between Means In Million Pounds
Asked for Interview	117	159.030	362.280	
Not asked	152	145.973	334.041	13.056

Levene's Test for Equality of Variances: F= .009 P= .926

T-test for Equality of Means

Variances	t-value	Degrees of Freedom	2-Tail Significance
Equal	.31	267	.760
Unequal	.30	238.90	.762

Table B.18 Comparison of Pre-Tax Profits between Those Asked for An Interview and Those Not for Anti-penultimate Set of Accounts With Largest Two Company Excluded

Test of Equality of Variance

Variable	Number of Cases	Mean in Million Pounds	Standard Deviation in Million Pounds	Difference between Means In Million Pounds
Asked for Interview	116	143.296	334.969	
Not asked	152	120.517	350.439	22.779

Levene's Test for Equality of Variances: F= .00 P= .991

T-test for Equality of Means

Variances	t-value	Degrees of Freedom	2-Tail Significance
Equal	.54	266	.591
Unequal	.54	252.94	.589

Table B.19 Comparison of Sales between Those Asked for An Interview and Those Not for Last Set for Accounts

Test of Equality of Variance

Variable	Number of Cases	Mean in Million Pounds	Standard Deviation	Difference between Means In Million Pounds
Interviewed	46	4757.879	10471 681	
Not Interviewed	225	2020.366	3000 159	2737.513

Levene's Test for Equality of Variances: F= 20.971 P= 000

T-Test for Equality Of Means

Variances	t-value	Degrees of Freedom	2-Tail Significance
Equal	3.33	269	.001
Unequal	1.76	46.52	.085

Table B 20 Comparison of Sales between Those Interviewed and Those Not Interviewed for Penultimate Set of Accounts

Test of Equality of Variance

Variable	Number of Cases	Mean in Million Pounds	Standard Deviation in Million Pounds	Difference between Means In Million Pounds
Not Interviewed	46	4505.187	10291.571	
Not Interviewed	225	1912.617	2944.209	2592.570

Levene's Test for Equality of Variances: F= 19.080 P= 000

T-test for Equality of Means

Variances	t-value	Degrees of Freedom	2-Tail Significance
Equal	3.19	269	.002
Unequal	1 68	46 49	.100

Table B 21 Comparison of Sales between Those Interviewed and Those Not Interviewed for Anti-Penultimate Set of Accounts

Test of Equality of Variance

Variable	Number of Cases	Mean in Million Pounds	Standard Deviation in Million Pounds	Difference between Means In Million Pounds
Interviewed for Interview	46	4110.2123	9203.250	
Not Interviewed	223	1788.190	2746.809	2322.022

Levene's Test for Equality of Variances: F= 19.145 P= .000

T-test for Equality of Means

Variances	t-value	Degrees of Freedom	2-Tail Significance
Equal	3.16	267	.002
Unequal	1.70	46.67	.097

Table B.22 Comparison of Pre-Tax Profits between Those Interviewed and Those Not Interviewed for Last Set of Accounts

Test of Equality of Variance

Variable	Number of Cases	Mean in Million Pounds	Standard Deviation in Million Pounds	Difference between Means In Million Pounds
Interviewed	46	417.206	1050.447	
Not Interviewed	225	161.732	382.634	255.473

Levene's Test for Equality of Variances: F= 13.783 P= .00

T-test for Equality of Means

Variances	t-value	Degrees of Freedom	2-Tail Significance
Equal	2.85	269	.005
Unequal	1.63	47.47	.110

Table B.23 Comparison of Pre-Tax Profits between Those Interviewed and Those Not Interviewed for Penultimate Set of Accounts

Test of Equality of Variance

Variable	Number of Cases	Mean in Million Pounds	Standard Deviation in Million Pounds	Difference between Means In Million Pounds
Interviewed	46	381.000	967.859	
Not Interviewed	225	138.153	318.703	242.847

Levene's Test for Equality of Variances: F= 19.527 P= .000

T-test for Equality of Means

Variances	t-value	Degrees of Freedom	2-Tail Significance
Equal	3.06	269	.002
Unequal	1.68	47.01	.099

Table B.24 Comparison of Pre-Tax Profits between Interviewed and Those Not Interviewed for Anti-penultimate Set of Accounts

Test of Equality of Variance

Variable	Number of Cases	Mean in Million Pounds	Standard Deviation in Million Pounds	Difference between Means In Million Pounds
Interviewed	46	333.290	890.882	
Not Interviewed	224	119.261	324.384	214.028

Levene's Test for Equality of Variances: F= 16.816 P= .000

T-test for Equality of Means

Variances	t-value	Degrees of Freedom	2-Tail Significance
Equal	2.81	268	.005
Unequal	1.61	47.48	.115

Table B.25 Comparison of Sales Between Those Asked for An Interview and Those Not for Last of Set of Accounts With Largest Company Removed

Test of Equality of Variance

Variable	Number of Cases	Mean in Million Pounds	Standard Deviation	Difference between Means In Million Pounds
Interviewed	45	3487.410	6017.690	
Not Interviewed	225	2020.366	3000.159	1467.043

Levene's Test for Equality of Variances: F= 6.590 P= .011

T-Test for Equality Of Means

Variances	t-value	Degrees of Freedom	2-Tail Significance
Equal	2.45	268	.015
Unequal	1.60	48.46	.117

Table B.26 Comparison of Sales between Those Interviewed and Those Not Interviewed for Penultimate Set of Accounts With Largest Company Removed

Test of Equality of Variance

Variable	Number of Cases	Mean in Million Pounds	Standard Deviation in Million Pounds	Difference between Means In Million Pounds
Not Interviewed	45	3195.25	5476.6505	
Not Interviewed	225	1912.617	2944.209	1284.908

Levene's Test for Equality of Variances: F= 4.983 P= .026

T-test for Equality of Means

Variances	t-value	Degrees of Freedom	2-Tail Significance
Equal	2.26	268	.025
Unequal	1.53	49.20	.132

Table B 27 Comparison of Sales between Those Interviewed and Those Not Interviewed for Anti-Penultimate Set of Accounts With Largest Company Removed

Test of Equality of Variance

Variable	Number of Cases	Mean in Million Pounds	Standard Deviation in Million Pounds	Difference between Means In Million Pounds
Interviewed for Interview	45	2978.884	5139.175	
Not Interviewed	223	1788.190	2746.809	1190.694

Levene's Test for Equality of Variances: F= 5.011 P= .026

T-test for Equality of Means

Variances	t-value	Degrees of Freedom	2-Tail Significance
Equal	2.23	268	.027
Unequal	1.51	49.19	.137

Table B 28 Comparison of Pre-Tax Profits between Those Interviewed and Those Not Interviewed for Last Set of Accounts Largest Company Removed

Test of Equality of Variance

Variable	Number of Cases	Mean in Million Pounds	Standard Deviation in Million Pounds	Difference between Means In Million Pounds
Interviewed	45	279.210	482.331	
Not Interviewed	225	161.732	382.634	117.478

Levene's Test for Equality of Variances: F= 2.316 P= .129

T-test for Equality of Means

Variances	t-value	Degrees of Freedom	2-Tail Significance
Equal	1.80	268	.074
Unequal	1.54	55.60	.129

Table B.29 Comparison of Pre-Tax Profits between Those Interviewed and Those Not Interviewed for Penultimate Set of Accounts With Largest Company Removed

Test of Equality of Variance

Variable	Number of Cases	Mean in Million Pounds	Standard Deviation in Million Pounds	Difference between Means In Million Pounds
Interviewed	45	260.867	528.281	
Not Interviewed	225	138.153	318.703	122.714

Levene's Test for Equality of Variances: F= 6.537 P= .011

T-test for Equality of Means

Variances	t-value	Degrees of Freedom	2-Tail Significance
Equal	2.08	268	.039
Unequal	1.50	50.9	.139

Table B.30 Comparison of Pre-Tax Profits between Interviewed and Those Not Interviewed for Anti-penultimate Set of Accounts With Largest Company Removed

Test of Equality of Variance

Variable	Number of Cases	Mean in Million Pounds	Standard Deviation in Million Pounds	Difference between Means In Million Pounds
Interviewed	45	222.630	485.392	
Not Interviewed	224	119.261	324.384	103.368

Levene's Test for Equality of Variances: F= 4.355 P= .038

T-test for Equality of Means

Variances	t-value	Degrees of Freedom	2-Tail Significance
Equal	1.78	2687	.077
Unequal	1.37	52.17	.177

Table B.31 Comparison of Sales Between Those Asked for An Interview and Those Not for Last of Set of Accounts With Largest Two Companies Removed

Test of Equality of Variance

Variable	Number of Cases	Mean in Million Pounds	Standard Deviation	Difference between Means In Million Pounds
Interviewed	44	2933.419	4787.777	
Not Interviewed	225	2020.366	3000.159	913.053

Levene's Test for Equality of Variances: F= 1.202 P= .274

T-Test for Equality Of Means

Variances	t-value	Degrees of Freedom	2-Tail Significance
Equal	1.65	267	.100
Unequal	1.22	49.80	.229

Table B.32 Comparison of Sales between Those Interviewed and Those Not Interviewed for Penultimate Set of Accounts With Largest Two Companies Removed

Test of Equality of Variance

Variable	Number of Cases	Mean in Million Pounds	Standard Deviation in Million Pounds	Difference between Means In Million Pounds
Not Interviewed	44	2708.832	4437.652	
Not Interviewed	225	1912.617	2944.209	796.215

Levene's Test for Equality of Variances: F= .858 P= .355

T-test for Equality of Means

Variances	t-value	Degrees of Freedom	2-Tail Significance
Equal	1.49	267	.136
Unequal	1.14	50.65	.259

Table B.33 Comparison of Sales between Those Interviewed and Those Not Interviewed for Anti-Penultimate Set of Accounts With Largest Two Companies Removed

Test of Equality of Variance

Variable	Number of Cases	Mean in Million Pounds	Standard Deviation in Million Pounds	Difference between Means In Million Pounds
Interviewed for Interview	44	2510.154	4143.607	
Not Interviewed	223	1788.190	2746.809	731.964

Levene's Test for Equality of Variances: F= .801 P= .371

T-test for Equality of Means

Variances	t-value	Degrees of Freedom	2-Tail Significance
Equal	1.47	265	.143
Unequal	1.12	5063	.268

Table B.34 Comparison of Pre-Tax Profits between Those Interviewed and Those Not Interviewed for Last Set of Accounts Largest Two Companies Removed

Test of Equality of Variance

Variable	Number of Cases	Mean in Million Pounds	Standard Deviation in Million Pounds	Difference between Means In Million Pounds
Interviewed	44	241.397	414.987	
Not Interviewed	225	161.732	382.634	79.665

Levene's Test for Equality of Variances: F= .398 P= .529

T-test for Equality of Means

Variances	t-value	Degrees of Freedom	2-Tail Significance
Equal	1.25	267	.214
Unequal	1.18	58.18	.243

Table B.35 Comparison of Pre-Tax Profits between Those Interviewed and Those Not Interviewed for Penultimate Set of Accounts Largest Two Companies Removed

Test of Equality of Variance

Variable	Number of Cases	Mean in Million Pounds	Standard Deviation in Million Pounds	Difference between Means In Million Pounds
Interviewed	44	220.682	459.580	
Not Interviewed	225	138.153	318.703	82.529

Levene's Test for Equality of Variances: F= 2.264 P= .134

T-test for Equality of Means

Variances	t-value	Degrees of Freedom	2-Tail Significance
Equal	1.45	267	.148
Unequal	1.14	51.38	.260

Table B.36 Comparison of Pre-Tax Profits between Interviewed and Those Not Interviewed for Anti-penultimate Set of Accounts Largest Two Companies Removed

Test of Equality of Variance

Variable	Number of Cases	Mean in Million Pounds	Standard Deviation in Million Pounds	Difference between Means In Million Pounds
Interviewed	45	186.962	427.207	
Not Interviewed	224	119.261	324.384	67.701

Levene's Test for Equality of Variances: F= 1.255 P= .264

T-test for Equality of Means

Variances	t-value	Degrees of Freedom	2-Tail Significance
Equal	1.20	266	.233
Unequal	1.00	53.16	.324

APPENDIX C LETTER REQUESTING INTERVIEWS WITH COMPANIES

Note- Professor Gray's letter was sent out on his Warwick Business School headed paper, and Mark Albrighton's letter on Warwick Business School headed paper. This headed paper has since changed and is no longer available.

11 th July 1994

Address of
company

Dear *Name of Person*,

I am a carrying out a major project at Warwick Business School conducting research on the process of making successful acquisitions.

The main aim of this research is to examine the management processes leading up to an acquisition. This research intends to provide a better understanding of what is a very important process for major companies today.

We will provide feedback to all companies involved.

I am currently carrying out a series of interviews with senior acquisition managers in order to review current practice, these interviews generally take about an hour and focus on one acquisition in the recent past. To assist me with this research, I would be very grateful if I could discuss with you, or an appropriate member of your company, your management processes prior to an acquisition.

Complete confidentiality to individuals is guaranteed.

I hope you will be able to assist me in this study and I look forward to hearing from you.

Yours sincerely

Mark Albrighton
Doctoral Student

18 August, 1997

Address of
company
being written to

Dear *(Name of Person)*,
I am pleased to inform you that a major research project is being carried out at Warwick Business School into the process of making successful acquisitions with a view to learning more about the critical factors involved.

Mr Albrighton is the principal researcher responsible for the project (please see enclosed letter) and I would be most grateful if you could give your support to a very worthwhile endeavour.

Naturally, we will be pleased to let you have an advance copy of the main results of the research. Please also note that your views will be treated in the strictest confidence.

Your sincerely,

Professor Sidney J. Gray

APPENDIX D ADDITIONAL STATISTICAL TEST RESULTS

Table D.1 Results of Chi-Squared Tests between Company has Information Library and Number of People Asked for Information and Number of Sources of Information Used

Company has information library and number of people asked for information used divided at :	Minimum expected frequency	Probability of distribution occurring by chance
11	7.3	.27499
16	4.8	.30484
19	4.8	.30484
Sample Size 41 with 1 degree of freedom		
Company has information library and number of information sources used divided at :	Minimum expected frequency	Probability of distribution occurring by chance
3	4.3	1
4	6.1	.96262
6	5.0	1.0
8	4.4	.73668
Sample size 44 with 1 degree of freedom		

Table D.2 Results of Chi-Squared Tests between Company has Arranged Access to an Information Library and Number of People Asked for Information and Number of Sources of Information Used

Company has arranged access to an information library and number of people asked for information used divided at :	Minimum expected frequency	Probability of distribution occurring by chance
11	1	1
16	6	1
19	.6	1
Sample Size 39 with 1 degree of freedom		
Company has arranged access to an information library and number of information sources used divided at :	Minimum expected frequency	Probability of distribution occurring by chance
3	.6	.47949
4	8	1
6	.7	.53333
8	6	1
Sample size 40 with 1 degree of freedom		

Table D.3 Results of Chi-Squared Tests between Data on Markets Company Operates in is Available to Manager; and Number of people Asked for Information and Number of Sources of Information Used

Market share data on markets company operates in is available to manager and number of people asked for information used divided at :	Minimum expected frequency	Probability of distribution occurring by chance
11	5	.45832
16	4	1
19	4	1
Sample Size 33 with 1 degree of freedom		
Market share data on markets company operates in, is available to manager and number of information sources used divided at :	Minimum expected frequency	Probability of distribution occurring by chance
3	2.3	.17240
4	3.6	.43445
6	4.4	1
8	3.7	1
Sample size 35 with 1 degree of freedom		

Table D 4 Results of Chi-Squared Tests between Company Collects Data on Geographic Markets it Does not Operate in and Number of People Asked for Information and Number of Sources of Information Used

Company collects market share data on geographic markets it does not currently operate in and number of people asked for information used divided at :	Minimum expected frequency	Probability of distribution occurring by chance
11	8.5	.35156
16	6.5	.72860
19	6.5	.72860
Sample Size 36 with 1 degree of freedom		
Company collects market share data on geographic markets it does not currently operate in and and number of information sources used divided at :	Minimum expected frequency	Probability of distribution occurring by chance
3	4.9	.15103
4	6.8	.41995
6	6.9	.58239
8	5.7	.63249
Sample size 37 with 1 degree of freedom		

Table D.5 Results of Chi-Squared Tests between Period Companies Develop Cash Flow Models For and DCF Use and Success

Period used for cash flow analysis divided at 6[A] years and :	Sample Size	Degrees Of Freedom	Probability of Distribution Occurring by Chance	Minimum expected frequency
DCF used	27	1	.01306**	4
DCF one of a companies three key criteria	23	1	.01918**	3.9
	General Success Measure		First Specific Success Measure	Second Specific Success Measure
Period used for cashflow analysis	-.1565 [K]		.0067[K]	.1436[K]
Sample Size	21		14	22
Probability	.331		.331	.374
** Significant at 5 per cent level				
[K] Kendall correlation coefficient [A] Mean 7 667, Median 5.				

Table D 6 Results of Chi-Squared Tests between Company has Corporate Information Library and Size

Company has Corporate information library and sales divided at	Probability of Distribution Occurring by Chance	Minimum expected frequency
1 Billion	00823 ***	5
1 5 Billion	00696 ***	5 8
2 Billion	00791 ***	7 7
2 5 Billion	00561 ***	7 7
3 Billion	03689 **	6 3
** Significant at 5 per cent level	*** Significant at 1 per cent level	
All Tests had a Sample Size of 47 and 1 Degree Of Freedom		

Table D 7 Results of Chi-Squared Tests between Company has Corporate Information Library and Success

Company has corporate information library and general success measure divided at	Minimum expected frequency	Probability of distribution occurring by chance
2 5	2 3	1
2 7	3 2	69640
2 9	3 2	69640
3	3 6	1
3 1	4 2	1
3 2	4 9	53616
3 3	5 8	55607
3 4	5 8	55607
3 5	5 5	29486
3 6	4 5	07492 *-
3 7	3 8	02919 ** -
3 8	3 6	01834 ** -
3 9	2 9	03552 ** -
4 0	1 9	07279 * -
4 1	1 2	57049
Sample size 37 with 1 degree of freedom		

Table D.7 Continued Results of Chi-Squared Tests between Company has Corporate Information Library and Success

Company has corporate information library and first specific success measure divided at	Minimum expected frequency	Probability of distribution occurring by chance
3.5	2.6	1
3.6	2.9	1
3.7	3.5	1
3.8	3.9	.68696
3.9	4.5	1
4.0	3.2	.67747
4.1	3.2	.67747
4.2	3.2	.67747
4.3	3.2	.67747
4.4	2.6	1
Sample size 28 with 1 degree of freedom.		
Company has corporate information library and second specific success measure divided at	Minimum expected frequency	Probability of distribution occurring by chance
3	3.1	.12709
3.1	4.6	.31631
3.2	4.6	.31631
3.3	5.7	.25562
3.4	6.1	.17040
3.5	6.5	.10895
3.6	7.3	.15307
3.7	7.6	.12983
3.8	6.1	.55386
3.9	4.952	.50974
4.0	3.8	.46489
Sample size 42 with 1 degree of freedom.		
- Negative relationship		
** Significant at 5 per cent level	* Significant at 10 per cent level	

Table D 8 Results of Kendall Rank Correlation Tests between Success Measures

	General success measure	Second specific success measure
First Specific success measure	.2760 A	.3129 C
Sample Size	23	29
Second specific success measure	.3025 B	
Sample Size	36	

Note - results are Kendall rank correlation coefficients

A Significant at 6.8 per cent level

B Significant at 1.0 per cent level

C Significant at 1.9 per cent level

Table D 9 Results of Kendall Rank Correlation Tests between Success Measures and Man Weeks Work Standardised for DCF Use

	Man Weeks worked
General success measure	- 2835
Sample Size	26
First Specific success measure	- 1689
Sample Size	25
Second specific success measure	- 2619
Sample Size	32

Note - Kendall rank correlation coefficients are given

Table D 10 Results of Chi-Squared Tests between Discounted Cash Flow Used and First Specific Success Measure

Discounted cash flow used and firs specific success divided at	Minimum expected frequency	Probability of distribution occurring by chance
3.5	1.1	.28352
3.6	1.2	.56322
3.7	1.4	.61106
3.8	1.6	1
3.9	1.9	1
4.0	1.6	1
4.1	1.6	1
4.2	1.5	.61106
4.3	1.5	.61106
4.4	5.2	1
Sample size 30 with 1 degree of freedom.		

Table D 11 Results of Chi-Squared Tests between Discounted Cash Flow one of a Company's Three key Criteria and First Specific Success Measure

Discounted cash flow one of a company's three key criteria first specific success measure divided at	Minimum expected frequency	Probability of distribution occurring by chance
3.5	2.9	1
3.6	3.3	1
3.7	4.0	.46615
3.8	4.4	.44248
3.9	5.1	.10521
4.0	4.4	.26626
4.1	4.4	.26626
4.2	4	.69561
4.3	4	.69561
4.4	3.3	.68709
Sample size 30 with 1 degree of freedom.		

Table D.12 Results of Chi-Squared Tests between Discounted Cash Flow Used and Second Specific Success Measure

Discounted cash flow used and second specific success divided at:	Minimum expected frequency	Probability of distribution occurring by chance
3	1.6	1
3.1	2.4	1
3.2	2.4	1
3.3	3	.693513
3.4	3.2	.45592
3.5	3.4	.44695
3.6	3.8	1
3.7	4.4	.72224
3.8	3.6	.72123
3.9	3	1
4.0	2.4	1
Sample size 45 with 1 degree of freedom.		

Table D.13 Results of Chi-Squared Tests between Discounted Cash Flow One of a Company's Three key Criteria and Second Specific Success Measure

Discounted cash flow one of a company's three key criteria and second specific success measure divided at:	Minimum expected frequency	Probability of distribution occurring by chance
3	2.8	1
3.1	3.8	1
3.2	3.8	1
3.3	5.2	.38583
3.4	5.4	.33082
3.5	6.4	.13946
3.6	7.1	.46255
3.7	8.8	.49157
3.8	8.0	.53590
3.9	6.6	.11067
4.0	5.7	.36415
Sample size 38 with 1 degree of freedom.		

Table D.14 Results of Chi-Squared Tests between Company Used IRR and Success

Company uses IRR and general success measure divided at	Minimum expected frequency	Probability of distribution occurring by chance
2.5	2.6	1
2.7	3.7	1
2.9	3.7	1
3	4.4	.72808
3.1	5.2	.91350
3.2	5.9	.54760
3.3	7	.50689
3.4	7	.50689
3.5	6.3	.86059
3.6	5.2	.56238
3.7	4.4	.29638
3.8	4.1	.26568
3.9	3.3	.24524
4.0	2.2	.16732
4.1	1.4	.11476
Sample size 37 with 1 degree of freedom		
Company uses IRR and first specific success measure divided at	Minimum expected frequency	Probability of distribution occurring by chance
3.5	2.7	1
3.6	3.0	1
3.7	3.7	1
3.8	4.0	.46113
3.9	4.7	1
4.0	4.0	.69415
4.1	4.0	.69415
4.2	3.7	.70200
4.3	3.7	.70200
4.4	3.0	.67490
Sample size 30 with 1 degree of freedom		

Table D 14 Continued Results of Chi-Squared Tests between Company Used IRR and Success

Company uses IRR and second specific success measure divided at	Minimum expected frequency	Probability of distribution occurring by chance
3	3 0	68996
3 1	4 5	48803
3 2	4 5	48803
3 3	5 7	28241
3 4	6	19411
3 5	6 4	12877
3 6	7 2	46846
3 7	8 3	84824
3 8	6 8	45136
3 9	4 7	28982
4 0	4 5	74279
Sample size 45 with 1 degree of freedom		

Table D 15 Results of Chi-Squared Tests between Company Used Fixed Hurdle Rate in Specific Case and Success

Company used fixed hurdle rate in specific case and general success measure divided at	Minimum expected frequency	Probability of distribution occurring by chance
2 5	2 0	37521
2 7	2 7	1
2 9	2 7	1
3	2 2	1
3 1	4 0	70260
3 2	4 7	27830
3 3	5 3	32453
3 4	5 3	32453
3 5	5 0	45832
3 6	4 0	14898
3 7	3 3	04941 ** -
3 8	3 0	12104
3 9	2 3	02744 ** -
4 0	1 3	00806*** -
4 1	625	09073 * -
Sample size 33 with 1 degree of freedom		

Table D.15 Continued Results of Chi-Squared Tests between Company Used Fixed Hurdle Rate in Specific Case and Success

Company used fixed hurdle rate in specific case and first specific success measure divided at:	Minimum expected frequency	Probability of distribution occurring by chance
3.5	2.1	1
3.6	2.3	.65266
3.7	2.9	1
3.8	3.1	1
3.9	3.4	1
4.0	2.3	.36321
4.1	2.3	.36321
4.2	2.1	.63336
4.3	2.1	.63336
4.4	1.6	1
Sample size 27 with 1 degree of freedom		
Company used fixed hurdle rate in specific case and second specific success measure divided at:	Minimum expected frequency	Probability of distribution occurring by chance
3	2.3	1
3.1	3.6	1
3.2	3.6	1
3.3	4.2	1
3.4	4.6	1
3.5	4.9	.72008
3.6	5.2	.41422
3.7	6.2	.43286
3.8	5.2	.22067
3.9	4.2	.28356
4.0	3.3	.70038
Sample size 40 with 1 degree of freedom		

- Negative relationship	*** Significant at 1 per cent level
** Significant at 5 per cent level	* Significant at 10 per cent level

Table D 16 Results of Chi-Squared Tests between Company Used NPV and Not IRR and Success

Company used NPV and not IRR and success and general success measure divided at:	Minimum expected frequency	Probability of distribution occurring by chance
2.5	1.1	1
2.7	1.6	.64400
2.9	1.6	.64400
3	1.9	1
3.1	2.2	1
3.2	2.6	1
3.3	3	1
3.4	3	1
3.5	2.7	.67420
3.6	2.2	1
3.7	1.9	1
3.8	1.7	1
3.9	1.4	1
4.0	.9	1
4.1	.5	1
Sample size 38 with 1 degree of freedom.		
Company used NPV and not IRR and success and first specific success measure divided at:	Minimum expected frequency	Probability of distribution occurring by chance
3.5	1.6	1
3.6	1.8	.63714
3.7	2.2	1
3.8	2.4	.65987
3.9	2.8	1
4.0	2.4	.35753
4.1	2.4	.35753
4.2	2.2	.37171
4.3	2.2	.37171
4.4	1.8	.62714
Sample size 30 with 1 degree of freedom.		

Table D 16 Continued Results of Chi-Squared Tests between Company Used NPV and Not IRR and Success

Company used NPV and not IRR and success and second specific success measure divided at :	Minimum expected frequency	Probability of distribution occurring by chance
3	1.4	1
3.1	2.3	.41864
3.2	2.1	.41864
3.3	2.7	.69919
3.4	2.8	.69148
3.5	3.0	.68996
3.6	3.4	.42547
3.7	3.9	.69950
3.8	3.2	.23514
3.9	2.7	.40995
4.0	2.1	.66087
Sample size 40 with 1 degree of freedom		

Table D.17 Results of Chi-Squared Tests between Company Used IRR and Not NPV and Success

IRR used and not NPV and general success measure divided at :	Minimum expected frequency	Probability of distribution occurring by chance
2.5	1.8	1
2.7	2.6	1
2.9	2.6	1
3.0	3.2	1
3.1	3.7	.71500
3.2	4.2	.46902
3.3	5.0	.46125
3.4	5.0	.46125
3.5	4.5	.29318
3.6	3.7	1
3.7	3.2	1
3.8	2.9	1
3.9	2.4	.67314
The sample size was 38 with 1 degree of freedom		

Table D.17 Continued Results of Chi-Squared Tests between Company Used IRR and Not NPV and Success

IRR used and Not NPV and first success measure divided at :	Minimum expected frequency	Probability of distribution occurring by chance
3.5	2.7	.68213
3.6	3	1
3.7	3.7	.70200
3.8	4.0	.32155
3.9	4.7	1
4.0	4	.46113
4.1	4	.46113
4.2	3.7	.42528
4.3	3.7	.42528
The sample size was 45 with 1 degree of freedom		

Table D.18 Results of Chi-Squared Tests between DCF Used and Measures of Company Size

DCF used and	Sample Size	Minimum expected frequency	Probability of Distribution Occurring by Chance
Sales for last set of accounts split at 1 billion pounds	50	3.5	29569
Sales for last set of accounts split at 1.5 billion pounds	50	3.6	13028
Sales for last set of accounts split at 2 billion pounds	50	4.9	07513 * +
Sales for last set of accounts split at 2.5 billion pounds	50	4.0	26628
Sales for last set of accounts split at 3 billion pounds	50	3.7	28661
Pre-tax profits for last set of accounts split at 100 million pounds	50	3.8	46415
Pre-tax profits for last set of accounts split at 200 million pounds	50	3.8	06129 * +
Pre-tax profits for last set of accounts split at 300 million pounds	50	2.2	09174 * +

All tests had 1 degree of freedom

+ Direction of relationship postitive

***Significant at 1 per cent level

** Significant at 5 per cent level

* Significant at 10 per cent level

Table D 19 Results of Chi-Squared Tests between DCF as One of a Company's Three Key Criteria and Success for Acquisitions Resulting from an External Idea

DCF as one of a company's three key criteria and success and genera success measure divided at	Minimum expected frequency	Probability of distribution occurring by chance
2 5	9	1
2 7	1 5	1
2 9	1 5	1
3	1 8	55944
3 1	1 8	26573
3 2	1 8	26573
3 3	1 6	21678
3 4	1 6	21678
3 5	1 2	53007
3 6	1 2	53007
3 7	9	20280
3 8	9	20280
3 9	9	20280
4 0	6	1
4 1	6	1
Sample size 13 with 1 degree of freedom.		
DCF as one of a company's three key criteria and first specific success measure divided at	Minimum expected frequency	Probability of distribution occurring by chance
3 5	3	27273
3 6	4	36364
3 7	5	45455
3 8	5	1
3 9	3	1
4 0	2	1
4 1	2	1
4 2	2	1
4 3	2	1
4 4	2	1
Sample size 11 with 1 degree of freedom		

Table D.19 Continued Results of Chi-Squared Tests between DCF as One of a Company's Three Key Criteria and Success for Acquisitions Resulting from an External Idea

DCF as one of a company's three key criteria and second specific success measure divided at:	Minimum expected frequency	Probability of distribution occurring by chance
3	8	1
3.1	1.3	54670
3.2	1.3	54670
3.3	1.8	1
3.4	2	1
3.5	1.8	1
3.6	1.8	1
3.7	1.5	1
3.8	1.3	1
3.9	8	1
4.0	5	1
Sample size 16 with 1 degree of freedom		
- Direction of relationship negative		
***Significant at 1 per cent level		
** Significant at 5 per cent level		
* Significant at 10 per cent level		

Table D 20 Results of Chi-Squared Tests between DCF as One of a Company's Three Key Criteria and Success for Acquisitions Resulting from an Internal Idea

DCF as one of a company's three key criteria and success and genera success measure divided at:	Minimum expected frequency	Probability of distribution occurring by chance
2 5	4	44444
2 7	9	1
2 9	9	1
3	9	1
3 1	1 3	55882
3 2	2 2	11765
3 3	2 7	04299 ** -
3 4	2 7	04299 ** -
3 5	3 1	14480
3 6	4	15343
3 7	4	15343
3 8	3 6	18799
3 9	2 7	63801
4 0	1 8	09150* -
4 1	9	47059
Sample size 18 with 1 degree of freedom		
DCF as one of a company's three key criteria and first specific success measure divided at:	Minimum expected frequency	Probability of distribution occurring by chance
3 5	2 4	62848
3 6	2 4	62848
3 7	2 8	34985
3 8	2 8	34985
3 9	2 8	34985
4 0	4 3	65628
4 1	4 3	65628
4 2	4 3	1
4 3	4 3	1
4 4	3 3	1
Sample size 19 with 1 degree of freedom		

Table D 20 Continued Results of Chi-Squared Tests between DCF as One of a Company's Three Key Criteria and Success for Acquisitions Resulting from an Internal Idea

DCF as one of a company's three key criteria and second specific success measure divided at:	Minimum expected frequency	Probability of distribution occurring by chance
3	1.1	1
3.1	1.1	1
3.2	1.1	1
3.3	1.5	.61771
3.4	1.5	.61771
3.5	1.5	.61771
3.6	2.3	1
3.7	2.7	1
3.8	3.8	1
3.9	3.8	.65944
4.0	3.4	1
Sample size 21 with 1 degree of freedom		

Table D 21 Variables Not Significantly Related to Use of Discounted Cash Flow Analysis in a Company's 3 key Criteria

Access to information from target
Number of options considered
Used merchant bank as a consultant
Number of groups involved in project
Years spent in industry by person interviewed
Years spent at company by person interviewed
Number of acquisitions completed by person interviewed
Number of acquisitions reviews carried by person interviewed
Elapsed time taken for acquisition
Is market share data automatically sent to you or do you have to request it
Monitoring of product markets which company operates in outside its present geographical areas
Monitoring of product markets which company does not presently operate
Number of Pages in report containing quantitative data
Number of pages in report
Number of sources of information used
Number of people asked for information.
Number of people currently working on acquisitions
Number of consultants used.
Number of criteria used
Is the way the criteria applied and measured always standardised
Was person responsible from finance department or not.
Does the company employ anyone for whom acquisitions work is an important part of their job but not their primary role.
Does the company employ anyone whose primary role to work on acquisitions
Percentage of time spent on other work.
The level of use of standardised procedures.
Percentage of time spent on financial work.
Percentage of time spent on information collection
When criteria used to review an acquisition are established.

APPENDIX E MAIN VARIABLES USED

Note in some cases additional divisions of scalar variables were used for specific chi-squared tests if the values normally used did not produce valid tests or were marginal on significance levels.

ACQRANGE

Difference between highest and lowest number of acquisitions conducted in any year of last five years.

Mean	4.532	Median	4.000	Standard deviation	4.713
Minimum	1.000	Maximum	32.000		

Valid cases 47 Missing cases 5

Divisions used to convert variable to interval data: 4.5

ATCO

Years interviewee had spent at company.

Mean	7.942	Median	5.000	Standard deviation	7.059
Minimum	.000	Maximum	27.000		

Valid cases 43 Missing cases 9

Divisions used to convert variable to interval data: 4,6,8, and 10.

COMPLT

Number of completed acquisitions conducted by interviewee

Mean	16.263	Median	6.500	Standard deviation	29.111
Minimum	.000	Maximum	150.000		

Valid cases 38 Missing cases 14

Divisions used to convert variable to interval data: 6,8,9, and 10

DCFIN3

Was the results of discounted cash flow techniques amongst a companies three key criteria for the specific acquisition conducted

DCFUSED

Was discounted cash flow analysis used

EPS

Was Earnings per share used as a decision criteria

FIXED HURDLE RATES

Were fixed hurdle rates used in specific acquisition examined in detail taken from description of process This was further divided into no fixed hurdle rates, fixed hurdle rates but some flexibility, fixed hurdle rates applied reasonably rigorously (this includes companies that used rule based approaches to determine the rate)

GENERAL USE OF FIXED HURDLE RATES

Did the company generally have a fixed hurdle rate answer to closed question Geographic limits Did the company place geographic limits on the areas it was looking for acquisitions

GEOGRAPHIC LIMITS

Did the company place geographic limits on the areas it was looking for acquisitions

GROUPS

Number of groups of people involved in specific case

Mean	5 439	Median	5 000	Standard deviation	3 105
Minimum	1 000	Maximum	15 000		

Valid cases 49 Missing cases 3

Divisions used to convert variable to interval data 4 and 8

GSUCCES

Replication of Datta and Grants (1991) method where respondents were asked to answer with respect to the companies acquisitions in general

Mean	3.325	Median	3.368	Standard deviation	.763
Minimum	1.880	Maximum	5.000		

Valid cases 38 Missing cases 14

Divisions used to convert variable to interval data :2.7,2.9,3, 3.1,3.2,3.3, 3.4 ,3.5 ,3 6, 3.7,3.8,3.9, 4 and 4.1

IDEA

Was the source of the idea internal or external This was further divided into internal, seller, and third parties including advisers and merchant banks This further division often resulted in chi-squared tests being invalid as the minimum expected frequency fell below five.

IND

How many years had the interviewee spent in the industry the company he was working for was involved, including years spent at their present company

Mean	10.581	Median	8.000	Standard deviation	8.383
Minimum	.000	Maximum	35.000		

Valid cases 43 Missing cases 9

Divisions used to convert variable to interval data: 6, 8 and 10.

IRRNPVA

Did the company use both IRR and NPV

IRRONLYA

Did the company use IRR and not NPV

IRRX

Did the company use IRR

LNMNTHS

Elapsed time taken for acquisitions.

Mean	9.095	Median	6.000	Standard deviation	8.364
Minimum	1.250	Maximum	48.000		

Valid cases 50 Missing cases 2

Divisions used to convert variable to interval data: 3, 4, 6, and 10
Additional values were used as shown in tables.

MAXACQS

Highest number of acquisitions conducted in any one year in the last five sets of accounts.

Mean	5.447	Median	4.000	Standard deviation	5.405
Minimum	1.000	Maximum	36.000		

Valid cases 47 Missing cases 5

Divisions used to convert variable to interval data: 4.5 and 6.

MEDIANAC

Median of annual number of acquisitions for last five year.

Mean	2.585	Median	2.000	Standard deviation	2.968
Minimum	.000	Maximum	17.000		

Valid cases 47 Missing cases 5

Divisions used to convert variable to interval data: 3.3

MIACQS

Lowest number of acquisitions conducted any of last five years.

Mean	.915	Median	1.000	Standard deviation	1.282
Minimum	.000	Maximum	6.000		

Valid cases 47 Missing cases 5

Divisions used to convert variable to interval data: 1.8

NOCRIT

Number of the five financial criteria considered by the literature used

Mean	2.706	Median	3.000	Standard deviation	1.188
Minimum	.000	Maximum	5.000		

Valid cases 51 Missing cases 1

Divisions used to convert variable to interval data: 2 5

NOOFPE

Number of people asked for information.

Mean	17.105	Median	12.000	Standard deviation	17 741
Minimum	.000	Maximum	100.000		

Valid cases 43 Missing cases 9

Divisions used to convert variable to interval data: 11, 16 and 19

NOSOURCE

Number of sources of information used in specific case

Mean	8.196	Median	5.000	Standard deviation	14 479
Minimum	2.000	Maximum	100.000		

Valid cases 46 Missing cases 6

Divisions used to convert variable to interval data: 3, 4,6 and 8

OPTIONS

Number of options considered

Mean	1.760	Median	1.000	Standard deviation	1.318
Minimum	1.000	Maximum	6.000		

Valid cases 50 Missing cases 2

Division used to convert variable to interval data: 1.5

PRETAX0

Pre-tax profits for last set of accounts available on One Source on January 6 1996

Mean 462700.333 Median 162300.000 Standard deviation 1053858.69
Minimum 129700.00 Maximum 6627000.00

Valid cases 51 Missing cases 1

Divisions used to convert variable to interval data 100, 200, 300 and 400 million

PRETAX1

Pre-tax profits for penultimate set of accounts available on One Source on January 6 1996

Mean 408399.725 Median 129800.000 Standard deviation 942185.436
Minimum 350300.00 Maximum 5787000.00

Valid cases 51 Missing cases 1

Not converted to an interval variable as it was highly correlated with Pretax0

PRETAX2

Pre-tax profits for antepenultimate set of accounts available on One Source on January 6 1996

Mean 324977.745 Median 112000.000 Standard deviation 845849.824
Minimum 448400.00 Maximum 5313000.00

Valid cases 51 Missing cases 1

Not converted to an interval variable as it was highly correlated with Pretax0

PRFITAB0

Pre-tax profits for the last set of accounts available on one source on January 6, divided by sales

Mean	.089	Median	.084	Standard deviation	.052
Minimum	.052	Maximum	.253		

Valid cases 51 Missing cases 1

Divisions used to convert variable to interval data: 6,8,10 and 12 per cent

PRFITAB1

Pre-tax profits for the penultimate set of accounts available on One Source on January 6, divided by sales.

Mean	.078	Median	.083	Standard deviation	.056
Minimum	.119	Maximum	.219		

Valid cases 51 Missing cases 1

PRFITAB2

Pre-tax profits for anti-penultimate set of accounts available on One Source on January 6, divided by sales.

Mean	.067	Median	.077	Standard deviation	.091
Minimum	.422	Maximum	.221		

Valid cases 51 Missing cases 1

Q17

Number of staff currently working on acquisitions

Mean	4.608	Median	3.000	Standard deviation	6.087
Minimum	.000	Maximum	35.000		

Valid cases 40 Missing cases 12

Q19NUM

Number of different type of consultants a company has used

Mean	3.244	Median	3.000	Standard deviation	1.694
Minimum	.000	Maximum	6.000		

Valid cases 45 Missing cases 7

Divisions used to convert data to categorical data, 2 5 and 4

Q28A

Percentage of time spent on financial work

Mean	31.528	Median	30.000	Standard deviation	17.560
Minimum	5.000	Maximum	70.000		

Valid cases 36 Missing cases 16

Q28B

Percentage of time spent on other factors

Mean	38.839	Median	40.000	Standard deviation	20.174
Minimum	5.000	Maximum	82.500		

Valid cases 31 Missing cases 21

Q28C

Percentage of time spent on information collection

Mean	35.313	Median	32.000	Standard deviation	19.647
Minimum	1.000	Maximum	70.000		

Valid cases 32 Missing cases 20

QUANTPAGE

Number of pages of quantitative material in final report

Mean	26 610	Median	5 000	Standard deviation	112 922
Minimum	000	Maximum	800 000		

Valid cases 50 Missing cases 2

REVIEWED

Number of acquisition reviews the manger responsible for the acquisition had conducted

Mean	86 806	Median	13 500	Standard deviation	230 250
Minimum	1 000	Maximum	1000 000		

Valid cases 36 Missing cases 16

RPTLN

Length of final report

Mean	43 608	Median	18 000	Standard deviation	139 221
Minimum	3 000	Maximum	1000 000		

Valid cases 51 Missing cases 1

SALESY0

Sales for last set of accounts available on One-source on 6 January 1996

Mean	5283445 12	Median	2199400 00	Standard deviation	10699471 7
Minimum	31069 000	Maximum	61929000 0		

Valid cases 51 Missing cases 1

Divisions used to convert into SALESYO into dichotomous variable 1, 1.5, 2, 2.5, 3,3 5 billion

SALESY1

Sales for penultimate set of accounts available on One-source on 6 January 1996

Mean 5064499 73 Median 2092500 00 Standard deviation 10743512 5
Minimum 38753 000 Maximum 63350000 0

Valid cases 51 Missing cases 1

SALESY2

Sales for anti-penultimate set of accounts available on One-source on 6 January 1996

Mean 4658886 53 Median 1993500 00 Standard deviation 9640594 44
Minimum 38593 000 Maximum 55020000 0

Valid cases 51 Missing cases 1

SPSUC1

First specific success measure Replication of Datta and Grant's (1990) method See question 54 in appendix A

Mean 3 988 Median 3 974 Standard deviation 673
Minimum 2 500 Maximum 5 000

Converted to dichotomous variable using divisions at 3 6, 3 7, 3 8, 3 9, 4 0 and 4 1

Valid cases 30 Missing cases 22

SPSUC2

Second specific success measure Replication of Datta and Grant s(1990) method See question 64 in appendix A

Mean 3 608 Median 3 700 Standard deviation 797
Minimum 1 545 Maximum 5 000

Valid cases 46 Missing cases 6

Converted to dichotomous variable using divisions at 3 1, 3 2, 3 3, 3 4 ,3 5, 3 6, 3 7, 3 8, 3 9, 4 0 and 4 1

TOTACQ

Total number of acquisitions conducted by company in last 5 years. Data collected in February 1995

Mean	11	Median	11	Standard deviation	12.94
Minimum	78	Maximum	1		

Valid cases 45 Missing cases 6

Converted to dichotomous variable using a divisions at 9,10 and12

TOTACQSA

Total number of acquisitions conducted by company in last 5 years divided by sales for last set of accounts. Data collected in February 1995.

Mean	015	Median	.006	Standard deviation	.018
Minimum	.000	Maximum	.068		

Valid cases 44 Missing cases 8

Converted to dichotomous variable using a division at .011

TOTACQPE

Total number of acquisitions conducted over last five years divided by number of people currently working on acquisitions.

Mean	6.740	Median	2.900	Standard deviation	7.867
Minimum	.167	Maximum	31.200		

Valid cases 34 Missing cases 18

WRKWEEKS

Man weeks work spent on acquisition prior to acquisition being concluded.

Mean	130.402	Median	52.000	Standard deviation	241.309
Minimum	3.000	Maximum	1300.000		

Valid cases 46 Missing cases 6

Converted to dichotomous variable using divisions at 101, 25,40, and into three categories with divisions at 28 and 75, and 30 and 90.